

*general publications*

# shopping centre decisions evaluation guides


CA20N  
MASI  
71531



robert w. mccabe, M.T.P.I.C.

1971

*Ontario. Municipal affairs dept. Community planning branch*



Digitized by the Internet Archive  
in 2022 with funding from  
University of Toronto

<https://archive.org/details/31761115475618>

CASON  
MASI  
71531

# shopping centre decisions

## evaluation guides

robert w. mccabe, M.T.P.I.C.  
planning consultant

department of municipal affairs  
minister • w. darcy mckeough  
deputy minister • w.h. palmer  
community planning branch  
director • d.f. taylor



shopping centre decisions  
evaluation guides

Robert W. Macabe M.B.A.  
Planning consultant



Department of Planning  
Library  
University of Toronto  
129 St. George Street  
Toronto, Ontario  
M5S 1A5

## PURPOSE

A new shopping centre in the suburbs can be a boon or a burden to a municipality. The lengthy, often agonizing, debates of municipal councils and planning boards on this subject testify to the complexities of deciding for or against new suburban retail facilities. Experience suggests that fresh injections of assessment revenue and business tax can be offset by losses from existing shops if the total market is not adequate. And the effect of a new commercial arrival on the transportation system and on the convenience of consumers is not easily weighed.

Under The Planning Act, the Community Planning Branch is obliged to scrutinize proposals for official plans. One of the objects of this report is to provide guidelines whereby the municipality can adopt sound development policies for its physical, social and economic goals as a basis for its official plan and in considering zoning applications. Obviously, reliable tools for measuring the potential impact of new retail facilities on the community and the region would give greater assurance that these policies are indeed valid and capable of being implemented.

This publication has been prepared to help the decision makers -- public and private -- develop those measurement techniques. As the author suggests, "the process of arriving at a decision involves a careful evaluation of the risks and uncertainties and an attempt to reach a final conclusion which involves minimum risk for the decision takers." The basis for decision making and the adequacy of official plan policy statements are examined in the context of two case studies -- Belleville and Thunder Bay.

The report is the work of Mr. R. W. McCabe, C.D., B.A., M. Com., M.Sc (Pl), M.T.P.I.C. Mr. McCabe has had many years of practical experience in retail location and in community planning as a municipal and department store employee and as a consultant. A professional planner, the author is presently a lecturer in urban and regional planning at the University of Toronto.





The Branch gratefully acknowledges the cooperation of the Ontario Municipal Board and of the many municipal people who assisted in collecting and preparing this material.

M. H. Sinclair, M.T.P.I.C.  
Head,  
Research & Special Studies,  
Community Planning Branch

Jean C. Downing, M.T.P.I.C.  
Research Supervisor,  
Research & Special Studies,  
Community Planning Branch





## CONTENTS

	Page
PURPOSE	ii
CONTENTS	iv
FIGURES	vii
TABLES	viii

### CHAPTER 1. INTRODUCTION: APPROACHES AND CONCLUSIONS

Shopping Centres Defined	1
Measuring the Impact of Suburban Shopping Centres	4
Approach and Outline	6
Conclusions	7

### CHAPTER 2. URBAN PLANNING: RETAIL LOCATION AND RISK

The Planning Framework	9
Conflicts	10
Identification of Risk	11
- Policy Uncertainties	
- Information Uncertainties	
- Inter-relational Uncertainties	
Conclusions	19

### CHAPTER 3. THE METHODS OF TRADE AREA ANALYSIS

The Step-By-Step Approach	20
- Step I	Establish a tentative trade area.
- Step II	Determine initial desirable centre.
- Step III	Estimate total potential of area residents.



- Step IV	Analyse competing centres.	
- Step V	Survey consumer shopping habits.	
- Step VI	Estimate potential consumer expenditure and floor space requirements.	
- Step VII	Evaluate findings.	
A Further Illustration		34
Uncertainties in Trade Area Analysis		36
Conclusions		41

#### CHAPTER 4. THE CASE-STUDY MUNICIPALITIES

Purpose and Approach		42
The Lakehead Planning Area		43
- The Regional Context		
- The Spatial Structure of the Community		
- The Spatial Structure of Retailing		
- Resume of the Case		
- Review of Ontario Municipal Board Hearings		
1. The Matter at Issue		
2. Review of the Issues Raised		
a) Land Use Issues		
b) Water and Sewer Services		
c) Roads and Traffic		
d) Submissions		
3. Current Situation		
Conclusions - Lakehead Planning Area		49
Official Plan Policies - Lakehead Planning Area		50
- Extracts From Official Plan of Lakehead Planning Area		
Section 2.5	Regional Shopping Centre Uses	
Section 2.6	Community Commercial Use	



The City of Belleville	54
- The Regional Context	
- The Spatial Structure of the Community	
- The Spatial Structure of Retailing	
- Resume of the Case	
- Review of Ontario Municipal Board Hearings	
1. The Matter at Issue	
2. Review of the Issues Raised	
a) Land Use Issues	
b) Marketing Issues	
c) General Development and Regulatory Controls	
d) Site Considerations	
3. Current Situation	
Conclusion - Belleville	63
Conclusions - The Two Case Studies	64

#### CHAPTER 5. ALTERNATIVE METHODS FOR ASSESSING IMPACT

The Retail Gravity Models	66
Outline of Methodology: An Illustration	68
Applications	79
Conclusions	79
ANNOTATED BIBLIOGRAPHY	81



## FIGURES

	Page
1-1 The Structure of Shopping Areas	3
2-1 The Identification of Risk and Typical Reactions to Decision Making Under Conditions of Uncertainty	13
3-1 Step-By-Step Approach to Trade Area Analysis	21
3-2 An Example of the Step-By-Step Approach for Official Plan Studies	35
3-3 Block Diagram of Calculation of Future Retail Floor Space Requirements	38
3-4 Block Diagram of Retail Floor Space Requirements 1961-1981 for a City Centre	40
4-1 The Lakehead Planning Area	44
4-2 City of Thunder Bay Principal Shopping Areas	45
4-3 Trade Area - Belleville	55
4-4 City of Belleville Principal Shopping Areas	56
5-1 Simplified Block Diagram of Retail Gravity Model	70





## TABLES

	Page
3-1 Projected Per Capita Income. Lakehead Planning Area. 1966-1986.	25
3-2 Retail Sales. Lakehead Planning Area. 1966.	27
3-3 Projected Retail Sales Per Capita. Lakehead Planning Area. 1966-1986.	28
3-4 Projected Total Retail Sales Potential. Lakehead Planning Area. 1966-1986.	29
3-5 Retail Floor Space Requirements. Lakehead Planning Area. 1966-1986.	33
5-1 Retail Expenditure. Hypothetical City. 1966.	71
5-2 Shopping Centre Characteristics. Hypothetical City. 1966.	72
5-3 Estimated Shares of Retail Sales Attracted to Centres from Zone 7. Hypothetical City. 1966.	73
5-4 Summary Site Information. Hypothetical City. 1966.	74
5-5 Shopping Centre Characteristics (with New Centre Added). Hypothetical City. 1966.	75
5-6 Estimated Shares of Retail Sales Attracted to Each Centre from Zone 7 (with New Centre Added). Hypothetical City. 1966.	76
5-7 Summary Site Information (with New Centre Added). Hypothetical City. 1966.	77



## CHAPTER 1

### INTRODUCTION: APPROACHES AND CONCLUSIONS

This report arises from the results of a study instigated by Research and Special Studies, Community Planning Branch, in response to expressions of concern about the number of applications for suburban and regional shopping centres throughout the Province. These expressions have been received from municipalities, retailers, shopping centre developers, professional bodies and concerned individuals.

Increasing scrutiny of proposals for such centres, and their economic and social ramifications, are reflected in more recent hearings of the Ontario Municipal Board on rezoning applications and within the Department of Municipal Affairs on approvals or amendments to Official Plans.

#### Shopping Centres Defined

Throughout the report the term "suburban shopping centre" has been employed. This terminology has been adopted to distinguish the form of retailing that is being considered from other forms which include the typical shopping street or "ribbon commercial", and specialized areas such as "automobile row", specialty shopping areas, furniture districts, entertainment strips, etc. In most North American cities retail facilities are highly structured both locationally and in the functions they perform.

Fig. 1-1 illustrates this structuring of retail facilities and distinguishes between three main categories of business: centres, ribbons and specialized areas. Some of the activities may be found in one, two or all of these categories. The lines and arrows in the diagram show where the activities may occur in ribbons or centres or both.



Centres in the diagram are referred to as planned or unplanned. Some areas of retail activity have been developed, planned and built as one unit, usually by a single developer. Other areas of retail activity have developed piecemeal over a number of years based on a series of individual decisions and in that sense are "unplanned". The typical shopping centres found in the suburbs of communities are usually planned and built as such. The typical ribbon commercial strips in older parts of Ontario towns and cities can be referred to as unplanned. However, where a ribbon shopping street, with stores along one or both sides, serves the same function as a planned shopping centre, it is not unusual to find these referred to as "centres" as well. Such centres might better be called "unplanned" centres to keep the distinction clear.

The categorization of centres into convenience or local centres, neighbourhood or district centres, community, regional and metropolitan or downtown centres is largely a matter of convenience only. The distinction between each level of centre is based on the number of shops they serve, the kinds of functions they perform, the location they occupy, and the extent to which they are dominant or sub-dominant to other levels of centres.

In this report the term suburban shopping centre has been used to include only those which fall in the levels of neighbourhood and community centres although they might conceivably perform a regional function under some conditions within the context of Fig. 1-1.

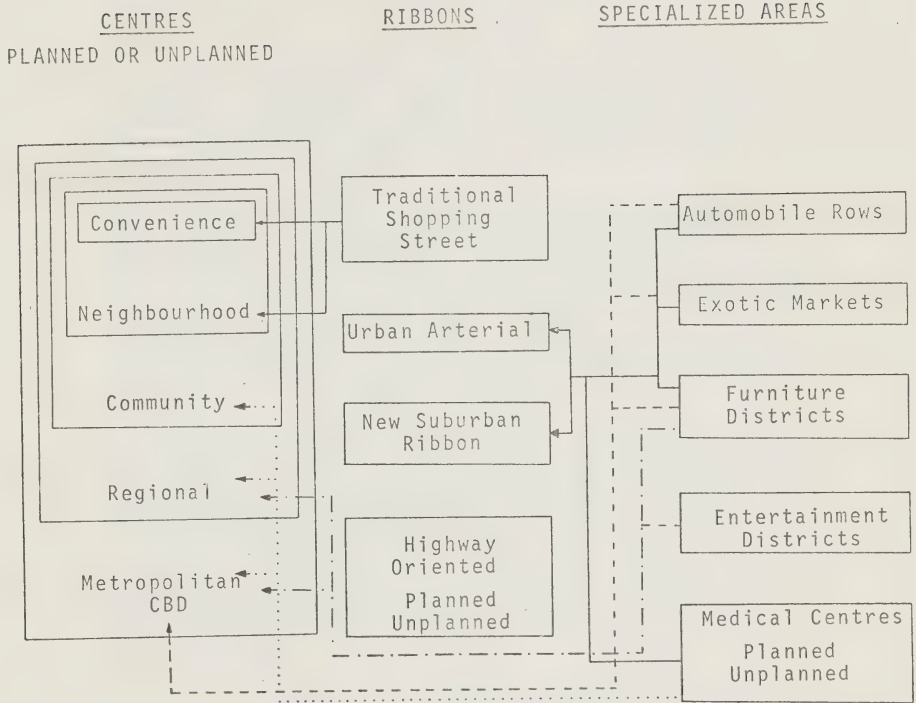
It is also assumed that suburban shopping centres refer principally but not exclusively to those that are planned in the sense in which it has been used here. In effect, this definition excludes small clusters of local shops located to serve only nearby residents for day-to-day goods, the downtown areas and the large regional shopping centres serving very large metropolitan areas.

In terms of the size of suburban shopping centres no single criterion can be used. They may vary from those with 10 or 12 shops up to those with 50 or 60. They may range in size from ten thousand square feet





# THE STRUCTURE OF SHOPPING AREAS



Source: Brian J.L. Berry, Commercial Structure and Commercial Blight. Chicago: Department of Geography Research Paper No.85, University of Chicago, 1963.

Fig. 1-1: The Structure of Shopping Areas



up to several hundreds of thousand square feet. They may be confined to retail shops alone or may include a full panoply of shops, entertainment, offices, and community facilities such as libraries, halls, health centres, etc.

One of the studies necessary to the preparation of an official plan would no doubt identify the existing hierarchy of centres, ribbons and specialized areas in the planning area and categorize them in some way which would be most appropriate in planning for future growth and development.

The establishment of suburban shopping centres in urban municipalities in Ontario is not a new phenomenon. Suburban centres have been a feature of urban development for well over twenty years. In spite of a general acceptance of the benefits of suburban centres in terms of shopping convenience, land costs and accessibility, the range of problems created for local government authorities and elected representatives in dealing with proposals for new centres is both complex and perplexing.

A review of recent decisions across Ontario has revealed the very wide array of decision criteria which have been used to judge the reasonableness of shopping centre applications. The examination has also revealed strong expressions of official concern about the risks involved in making such decisions. Risks appear to arise because of inadequacies in the formulation of development policies, in interpreting information on the nature of the shopping component of the urban plan and in evaluating the impact of new centres on established shopping areas.

### Measuring the Impact of Suburban Shopping Centres

The introduction of a new suburban shopping centre into a community can be justified on many grounds. A new centre could be built, for example, to serve the demands of an expanded population with higher income levels. A new centre could be built to serve the needs of people in more isolated areas who are now attracted to a town because of the availability of a new highway or rapid transit route.



Centres can also be justified because they provide goods and services not now available, or because they are more conveniently located to the residents. Building a new centre has consequences for many people whatever the reason for doing so. It is the consequences, both good and bad, that an impact study attempts to examine.

Increased convenience, comfort, and an enhanced availability of goods and services may be among the advantages of a new centre to its customers. The centre may provide, for example, increased employment opportunities or yield additional commercial assessment for the municipality. It may be the basis upon which new residents and new industry may be attracted to the town. It may furnish additional community services not presently available or enhanced social and cultural opportunities. Numerous other possible benefits could be listed without much further thought.

On the other hand, the introduction of a new centre could have some disadvantageous consequences for the community. It could mean hardship for some of the existing merchants, landlords and local suppliers if the centre is too big in terms of the market available to it. It could cause a decline in municipal revenue through reduced assessments on less competitive centres. It could increase municipal expenditures beyond what had been planned if a location was selected which was "off-centre" in relation to an already adopted strategy of growth and development. It could have undesirable social consequences if the pattern of social interchange is adversely disrupted.

A suburban shopping centre could also have unhappy consequences for a downtown area reducing the level of social, economic, administrative and cultural activity which makes a town vibrant. An inappropriate location could also have far reaching consequences for those who have made long-term commitments in the town on the basis of a previously adopted pattern of land uses in an official plan.

An impact study implies the assessment of the consequences for the community as a whole of the introduction of a new centre of a size and at a location not previously contemplated in adopted municipal policy guidelines. Obviously a study of the impact of a centre on a



municipality is a very specific thing to that municipality. The range and detail of the studies which would be appropriate have to be considered for each individual case. There are, however, some broad general guidelines which can be furnished to assist communities in making their own evaluation of their own situation.

### Approach and Outline

The approach to the general problem of the impact of suburban shopping centres has been based on the assumption that any decision making is a matter of selecting a solution to a problem from among a number of perceived alternatives. The process of arriving at a decision involves a careful evaluation of the risks and uncertainties and an attempt to reach a final conclusion which involves minimum risk for the decision taker. The introduction of a planning process into decision making at a local government level is designed, in large measure, to remove as much uncertainty about the future as possible.

Chapter 2 outlines how provision for orderly growth and development is presumed to be achieved under The Planning Act and identifies some of the risks that are apparent when a decision has to be made about suburban shopping centres where official plans have or have not been adopted.

Chapter 3 evaluates the methods used in conducting a market analysis study and estimating the sales potential at selected suburban shopping centre sites. It is anticipated that the greater the level of understanding of the total process, the better will be the ability of those who must make decisions based on this form of analysis to interpret the reports which they are asked to read.

The concept of risk analysis is introduced at the end of the chapter to illustrate how uncertainties appear in each step of the analysis and create further problems for the decision maker. It appears that calculations of future retail space requirements are as much a matter for public policy decisions as for technical projections by experienced analysts.





Chapter 4 is devoted to the presentation of two case-study municipalities in Ontario. One study emphasizes the way in which uncertainties can be reduced through the processes of developing policy guidelines for an official plan. In the second study, a similar procedure is followed but emphasis is placed on the inadequacies of current trade area analysis techniques as a means of assessing the impact of a proposed suburban shopping centre. In both instances the evidence presented at recent (1970) Ontario Municipal Board (O.M.B.) hearings on applications for rezoning is employed as a means of evaluating the adequacy of current practice.

Chapter 5 presents the case for the application of newer and more sophisticated methods which are now available for conducting at least partial impact studies and/or arriving at a decision when a choice must be made among several centre sites, each of which is claimed to supply the best alternative. This chapter points out the reason why these newer methods deserve wide application in Ontario. A special study of specific communities and centres would further test the usefulness of the methods and determine their true ability to improve decision making for suburban shopping centres.

A selected annotated bibliography is appended to the report. It contains some of the readily available sources of information on shopping centres, market analysis and the related urban planning policy studies. This bibliography contains those publications which it is thought are of particular relevance to a more comprehensive study of retail location for those who may wish to pursue the topic in greater depth.

### Conclusions

This report is designed as the first step in a larger study of the impact of suburban shopping centres in Ontario. It has been the thesis of this report that:

- (a) official plan policy statements, flowing from sophisticated trade area analyses and planning studies, are the principal basis upon which decisions concerning the location of suburban shopping centres can best be made;



- (b) risks and uncertainties will arise in deciding on retail location even when all the currently employed techniques have been used in assessing the consequences of the decision;
- (c) improved methodologies are available for assessing the impact of additional retail centres and should be employed more broadly;
- (d) if the results of this study could be used by all those concerned with planning decisions on retail location throughout the province, the general level of risk and uncertainty might be somewhat reduced; and
- (e) this research study is the basis upon which a larger and more detailed program of investigation is structured.

There is no basic methodological difference in the approaches to planning for retail facilities which ought to be adopted by shopping centre planners and by urban or regional planners. The basic goals of each are clearly compatible. Where urban planners have employed only the most rudimentary and simplistic approaches to the problems of retail facilities, their recommended policy guidelines and proposals are no less deficient than proposals for shopping centres where the analysis is based solely on a study of the market potential available at selected sites.

Where careful studies have been made of the amount, location and timing of all retail facilities to be provided in the community and where the inter-relationships between retailing and other forms of land use have been realistically considered, a climate of relatively risk-free participation in the decision process is provided for the whole community.

More specific conclusions will be found at the end of each chapter where an attempt has been made to summarize the principal points that have arisen in the discussion.



## CHAPTER 2

### URBAN PLANNING: RETAIL LOCATION AND RISK

#### The Planning Framework

Provision for orderly growth and development is the chief aim of the planning process in Ontario. This aim is presumed to be achieved principally through The Planning Act in terms of the preparation of planning studies, the adoption of official plans, the passing of restricted area (zoning) and building by-laws, implementation of controls over the subdivision of land, and the operation of committees of adjustment.<sup>1</sup>

If these processes were fully effective throughout all levels of government within the province it could be anticipated that there would be clear, unequivocal, and agreed-upon policy statements on the size, location and timing of provision for additional shopping centres in all jurisdictions. In addition, it could be presumed that the adoption of these policies would be based on extensive urban

---

<sup>1</sup> It is fully accepted that at the municipal level The Planning Act is only one among a large number of powerful tools available to local government councils to implement policy decisions aimed at influencing orderly growth and development. It is readily apparent that the provisions of The Municipal Act and The Ontario Water Resources Act, to name only two among the many, are valuable instruments in the implementation of official plan policy statements. This discussion is intended to indicate the essential role played by The Planning Act in developing policy guidelines for municipalities and to underscore the vital importance of each of the component planning studies upon which an official plan must be based.





planning, social, economic, and marketing studies indicating how much space will be needed for the future provision of suitable retail centres, as well as where and when the space may be required.

The ultimate responsibility for the actual provision of the site, the buildings, the parking spaces, the landscaping, the sewers, the roads, and the many other necessary improvements does not rest with those who prepare the official plans initially. The shopping centre which finally is built comes about through the joint efforts of many people including shopping centre developers, individual retailers, food chain operators, councils of local government, planning boards, officials and numerous other persons or bodies.

The objectives of each of the participants in the decision process are, in the main, in complete accord -- meeting the needs of consumers for access to the goods and services they require under the best possible conditions of comfort, convenience, safety and economy.

Questions of current patterns of shopping patronage, the levels of expenditure on retail goods and services, and even estimates of the number of people or households to be served in the future are essentially quantitative measures which can be reasonably well established.

Questions of the degree of comfort, convenience, safety and economy are largely qualitative in nature and subject to wide interpretation. The resolution of these qualitative questions revolves around the extent to which acceptable standards are to be met by competitive market forces or by the imposition of minimum acceptable standards by the public authority. The incidence of policy decisions such as these can vary from community to community and over time.

### Conflicts

Conflicts do still arise, however, when decisions are made on the size, location and timing of future shopping centres. Just as the adoption of an official plan involves the selection of one general pattern of future development from among a series of possible



alternative patterns as best serving the needs of the community, the region and the province as a whole, so too the approval of a specific arrangement of retail centres must often be consciously chosen from a number of perhaps equally advantageous arrangements.

Ideally, because of various kinds of uncertainties about the future, a pattern of future development will be chosen which maintains a sufficient degree of flexibility of choice in response to emerging trends in living arrangements, working, travelling and leisure time activities.

Similarly, commitments to future patterns of shopping centre deployment can make provision for adaptation to emerging trends in consumer shopping behaviour, income levels, demands for improved amenity and shifts in attitudes towards desirable on-site mixes of shopping and related community activities, such as libraries, parks, government offices, schools and transportation nodes.

The interaction of new life-styles typified by planned suburban neighbourhoods, and new patterns of shopping concentrations typified by new forms of integrated multi-use clusters of apartments, shopping and offices in the central area of a municipality increases the number of possible alternative solutions available to the community. Furthermore, it is often difficult to discern whether suburban neighbourhood development has become possible because of the trend to shopping centre development or if the reverse is true: that shopping centre development is a response to suburban neighbourhood residential forms.

An understanding of the potential conflicts between the selection of the most suitable pattern of orderly growth and development and the most suitable pattern for the provision of shopping facilities is of fundamental concern when attempting to assess the impact of a new form of shopping facility on existing retail shops.

### Identification of Risk

Questions about the resolution of some of the areas of conflict have assumed, to this point in the discussion, an idealized, almost hypothetical framework in which decision making is done under conditions where the aims of The Planning Act are being fully met.



In these circumstances clear policies are available to guide current decisions, adequate information is available and carefully interpreted, and the inter-relationships between shopping and the other components of the municipal pattern are clearly understood by all those who must take part in the decision process. Moreover, the implications of alternative decisions have been carefully evaluated and a course of action selected which best meets the current and future aims and aspirations of the community, the shoppers, the retailers and the land owners.

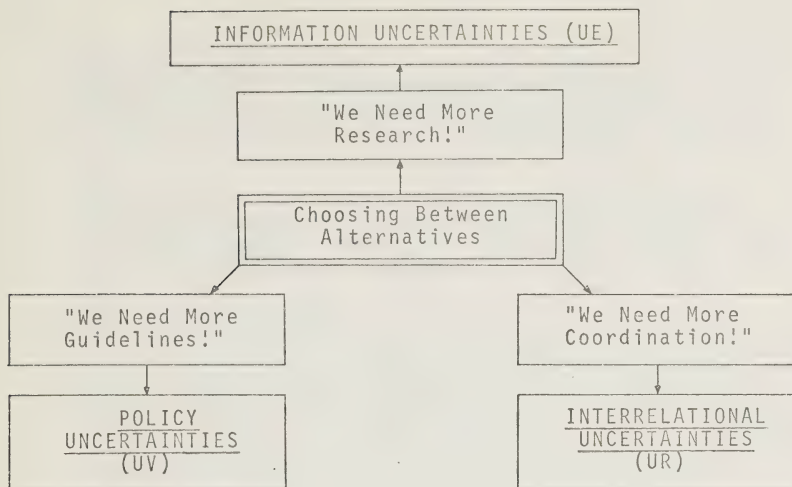
This hypothetical, idealized review of how provision for orderly growth and development can be achieved under The Planning Act is intended to provide a framework within which the subject matter of this particular phase of the research may be structured, that is, an approach to a study of the impact of suburban shopping centres on Ontario municipalities.

This framework has been selected because it seems to be the one best way to identify the key areas of uncertainty which have to be understood before it is possible to arrive at some conclusions on the planning implications of the appearance of a large number of applications for suburban shopping centres in Ontario towns.

Fig. 2-1 illustrates how one pair of researchers have viewed the typical reactions of decision makers when they are required to make a choice between alternative decisions under conditions of uncertainty. Their careful study suggests that all uncertainties can be classified into three principal groups. Each of the groups is typified by the reactions of decision makers who recognize a lack of guidelines, a lack of research or a lack of coordination, or even all three at once.

For example, if it is felt that the information supporting an application for a suburban shopping centre is inadequate in any respect, the decision maker is hampered in his ability to arrive at a "risk-free" decision. If the official plan does not provide the sorts of guidelines needed to make the decision as a matter of policy, further risks are assumed by the community.





Note: The three classes of uncertainty identified in the diagram are followed by a pair of symbols: UE, UV, UR. These symbols are employed at a later stage in the discussion as a means of simplifying references to the three kinds of risk. See, for example, Fig. 3-4 in Chapter 3.

Source: J.K. Friend and W.M. Jessop, Local Government and Strategic Choice, London-Tavistock Publications, 1969.

Fig. 2-1. The Identification of Risk and Typical Reactions to Decision Making Under Conditions of Uncertainty.





Risks are also incurred when the location of shopping centres are not closely related to the locational decisions for other components of the community, such as the road network, public transportation, libraries, etc.

Each of these three types of uncertainty, and the associated risks for the community in relation to suburban shopping centre decisions, are further discussed in the sections that follow.

### Policy Uncertainties

In the hypothetical model the general planning policies formulated under the process of official plan adoption remove a significant portion of the risk involved in deciding upon the acceptance or rejection of a shopping centre proposal. It is presumed that, if a plan is properly formulated, the local government authorities, shopping centre developers, provincial officials and boards have a clear basis on which to accept or reject a proposal. A study of the planning implications must therefore take into account the extent and appropriateness of existing official plan statements in guiding the orderly development of retail facilities.

In those areas of the province where there are no formally adopted official plans and no zoning controls, or even where these guiding and control mechanisms are not sufficiently specific in their intent, the guidance of development will continue to operate under conditions of extreme uncertainty. These conditions become critical where the less well controlled areas are immediately adjacent to urban municipalities in which there exists the potential for the development of additional shopping centres. In these circumstances the policy uncertainties could be reduced only by provincial government intervention.

This intervention might take a number of forms. The Province could require that all approvals of shopping centre sites be substantiated on the same basis as those where appropriate policies do exist. In this case the anticipated result would be to force municipalities or shopping centre developers to do the necessary community planning.

The introduction of regional governments charged with the responsibility of adopting an official plan containing appropriate policy guidelines based on adequate studies would be one way of achieving this objective.



Other means might include amendments to The Planning Act requiring all municipalities to produce official plans which met the required standards, or an outright refusal to approve any shopping centre applications in areas where, in the opinion of the Department of Municipal Affairs, adequate policy guidelines do not exist.

The consequences of a failure to provide appropriate policy guidelines are numerous. The most obvious are the heightened risks to the municipality, to the shopping centre developer and tenants, and to the shopping public. In the final analysis, the studies which are normally required for the preparation of the retail shopping component of an official plan have to be undertaken in any case, either by the centre developers to reduce their own risks and to substantiate their claim, or by the municipality to reduce their own uncertainties and, if necessary, refute the developer's case.

The "case-study" municipalities outlined in Chapter 4 will illustrate this point. In one instance the approval of a centre was held up for a lengthy period of time until the requisite studies were completed. In the second case the same type of studies had already been undertaken in the course of the preparation of an official plan. As a consequence, well founded official plan policy guidelines were available to the decision makers. The costs of the studies conducted for each municipality would presumably be relatively the same but the second community would appear to have received much greater benefit from its expenditure.

#### Information Uncertainties

Uncertainties about the quantity, quality and phasing of proposed future shopping centres are largely a matter of empirical study. It is assumed, consequently, that if the facts of each case can be established there can be little room for conflict on this score. The assumption still leaves three types of possible uncertainty largely unresolved. These three types are:

- (a) Uncertainties inherent in the methodology of the studies employed to establish the facts of each case. Here two kinds or risks can be identified. Uncertainties may be introduced by the methods of measurement, such as the exact amounts of existing retail floor space.



Uncertainties may also be introduced by varying the assumptions which are made about the future. For example, the attractiveness of downtown vis-a-vis suburban centres.

- (b) Uncertainties about how to measure the impact of a new suburban shopping centre on existing facilities. Two choices are available, first, whether the impact study should be confined to a measure of how each existing centre's share of the total retail market would be affected by a new centre at a given location, or, second, whether the impact study should attempt to take into account the full range of resulting social and economic costs or benefits that can be identified.
- (c) Uncertainties about the number of other possible locations for the proposed new centre, and the evaluation of the impact of alternative possible centre sites upon the municipality.

Efforts to reduce information uncertainties of the first kind can be addressed directly by reviewing the commonly accepted methodology employed throughout the province in market analysis studies by shopping centre developers and planning authorities alike. If the uncertainties introduced by the methodology can be identified, the probability of critical errors in judgement based on these results can be adequately evaluated. The risks involved can be more clearly recognized and improved decisions should result. A preliminary examination of a few decisions in Ontario has confirmed the need for this form of evaluation. Some of the specific sources of methodological uncertainty are discussed in Chapter 3 and are further clarified in one of the case-study municipalities.

Reduction of information uncertainty through impact studies for risks of the second and third types requires the application of much more sophisticated techniques than any which appear to have been attempted in Ontario so far. Detailed studies of the social and economic impact of shopping centres that have been built would also be most useful.



Recommendations on how such studies could be undertaken have been presented as a supplement to this report. The study design includes provision for an evaluation of the available methods for measuring impact, the factors to be examined and the advantages of a study that extends over a number of years so that adequate information will be collected and examined over a relatively long period of time, say five years.

#### Inter-relational Uncertainties

Another series of uncertainties can be identified in the hypothetical model. These involve consideration of the relationships which exist or which it is thought ought to exist, between downtown shopping, suburban shopping centres and the balance of the community and its region. Four specific types of inter-relational uncertainty can be recognized.

- (a) Uncertainties arise over how shopping centres should be integrated into the development plans for the whole municipality. The inter-relationships which it is thought should exist must somehow be established between the major community activities of a governmental, cultural, social, recreational, office, entertainment, or transportation nature and shopping activities. Attitudes towards the linking of community and shopping activities within the urban area may be matters of need, preference or taste and appear to vary over time. Decisions on where each type of activity could most appropriately be located in relation to retailing introduce uncertainties currently and for the future.

Alternative arrangements and public attitudes need to be evaluated as part of the planning process in order to reduce the risk in deciding upon the scale, timing and allocation of retail space throughout the total community.

- (b) Uncertainties exist at the suburban shopping centre level as to how the centre should be integrated into the surrounding neighbourhood and what grouping of related community facilities should be appropriately combined into a single centre. As in (a), alternative arrangements need to be evaluated and the uncertainties of the appropriateness of a proposed centre site evaluated in these terms.





The primary goal of shopping centres is to best serve the needs of the population for retail goods and services subject to the maintenance of a reasonable return on invested capital. How centres can or should be integrated into individual neighbourhoods and communities within a municipality is related to the proposed development plan for residential neighbourhoods.

The appropriateness of the size and distribution of centres is, therefore, largely a function of the size and nature of the neighbourhoods, the number of households, their income levels and the density of population. Evaluation of the appropriateness of a centre on a specific site implies a conscious choice among alternative arrangements based on questions of convenience, accessibility, amenity, economy, and the range and selection of goods and services offered in a given neighbourhood centre.

- (c) A further set of uncertainties of an inter-relational nature are introduced when consideration is given to attitudes in the community towards the appropriate linkages for the future community-wide, district and local activities. For example, emerging trends towards the linking of entertainment or leisure-time activities to shopping activities may reflect a change in the individual household's view of desirable life-styles, increasing wealth, or the attitudes towards money and work.

Similarly, uncertainties may also arise through the introduction of new forms of retailing, or the regrouping of shops of specific types into newer kinds of centres. The degree to which suburban shopping centres have been accepted by the public and the current questioning of the role of "downtown" in many towns in Ontario appears to provide a clear illustration of uncertain attitudes about the future.

- (d) The inter-relationship between the spatial structure of a municipality and its shopping centres is also influenced by the role of the municipality in respect to the region which surrounds it. The rate of urbanization in different areas of the province may vary and



uncertainty about the current or future role of the municipality in catering to the needs of people in the surrounding region for goods and services must be somehow recognized.

The review of the case-study municipalities in Chapter 4 has attempted to extract evidence of these four types of inter-relational uncertainties.

### Conclusions

This chapter has aimed at showing how policies for orderly growth and development in official plan studies have to encompass adequate provision for retail shopping facilities. Even when such policies have been carefully worked out there are still certain types of risks which have to be recognized when a locational decision is to be made about suburban shopping centres.

Where uncertainties do arise, it is useful to be able to categorize them by types and to understand the ways in which they might be reduced. The general types of uncertainty described here relate to policy uncertainties, inter-relational uncertainties and information uncertainties. Further elaboration on the problems of risk and uncertainty in decision making is introduced in Chapters 3 and 4 as a means of illustrating the basic premises of Chapter 2.



## CHAPTER 3

### THE METHODS OF TRADE AREA ANALYSIS

This chapter presents a brief review of the methods currently employed by market analysts to evaluate the market potential of existing or proposed centres. It has been organized to assist in interpreting and evaluating the material submitted in support of proposed retail developments. Fuller details on the methods of market analysis and how they may be employed will be found in the publications cited in the bibliography which is appended to this report.

The majority of studies of estimated future retail floor space requirements for a community are based on the methodology of trade area analysis. The analysis is shopping centre oriented, that is, market potential is viewed from the viewpoint of the retailer or developer. Initially studies of this kind were restricted to the concerns of individual retailers or to specific types of goods. Later modifications made the methodology applicable to shopping centres in which there are many retailers and many types of shops.

#### The Step-By-Step Approach

The potential for retail sales at a specific site can be approximated by a series of studies. These studies are usually carried out step by step, proceeding from the delineation of the estimated trading area of the centre from which its trade is expected to be drawn, to a final calculation of the number of square feet of retail floor space by store type which will optimize the sales potential at the proposed site. The methodology is sometimes referred to as the "step-by-step" method because of the sequential nature of the analysis.



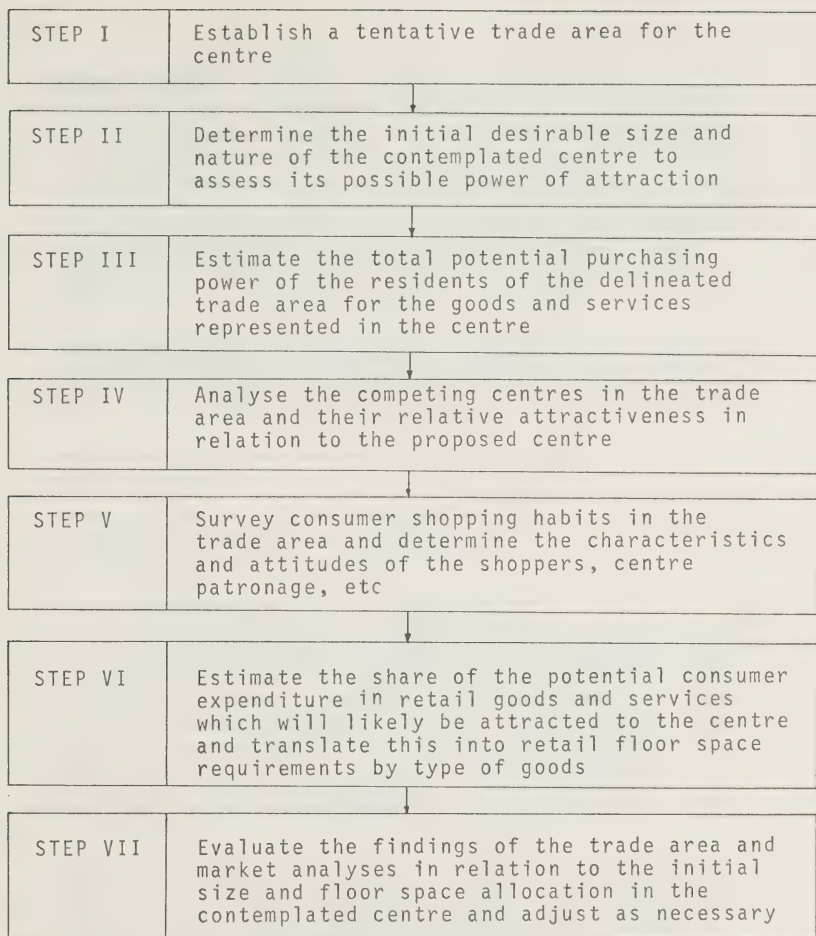


Fig. 3-1: Step-By-Step Approach to Trade Area Analysis





Fig. 3-1 shows diagrammatically in a much simplified way the steps which are taken and how the answers from one step are used to answer the questions posed in the following steps. It is obvious that it would be neither possible nor useful to present a detailed and comprehensive view of the whole process. However, a brief resume of each of the steps is provided below in an attempt to achieve a better level of understanding of the total process so that those who must make decisions based on this form of analysis can better interpret the reports presented to them.

Applications of this methodology vary from analyst to analyst and from consultant to consultant. Accepting these variations, the methods described here are the basic steps which will be found in almost all reports.

STEP 1
Establish a tentative trade area for the centre

The establishment of the boundaries of the trade area for a centre depends in large part on the knowledge and experience of the analyst, the retailer, or the developer. Large scale retailers with many outlets know from experience the size of the area from which they can reasonably expect to attract customers for a given size of store or centre. Other means of estimating trade areas must be employed where this knowledge is not available.

Motor vehicle permit surveys of parked cars, street interviews, home interview surveys, mapping of newspaper circulation, customer spotting and other means are among the methods commonly employed if a centre is already established. In some instances formula approaches are used including "Laws of Retail Gravity" or other concepts of spatial interaction.

Primary and secondary trade areas may be delineated, particularly in dealing with towns and cities outside the major metropolitan areas. The primary trade area



delineates the boundaries within which the bulk of the centre's shopping activity is generated. A secondary trade area attempts to define the broader region from which a lesser portion of the town's business may expect to be drawn. Again knowledge and experience play an important role in determining what share of the potential market can be expected from each of the two delineated trade areas. Boundaries represent the extent of significant business and do not reflect differences in consumer behaviour on either side of the line.

An example of how the primary and secondary trade areas were delineated for one of the case-study municipalities is shown in Fig. 4-3 in Chapter 4.

#### STEP II

Determine the initial desirable size and nature of the contemplated centre to assess its possible power of attraction

The initial size and nature of the contemplated centre is assessed from a study of the characteristics of the site, its accessibility in terms of time and distance from the surrounding area, the current and future population of the trade area, income and expenditure patterns of residents, estimates of construction costs, land and operating costs, economic store size, and a great many other detailed considerations.

#### STEP III

Estimate the total potential of the residents of the delineated trade area in the goods and services represented in the centre

Estimates of the total potential expenditure on retail goods and services by the residents of the delineated



trade areas are calculated from information obtained from a variety of sources. Current population or household figures may be obtained from Census data published by the Dominion Bureau of Statistics\*, from official plan studies, from assessment rolls, or from post office returns of addresses served. In the Census Metropolitan Areas information may be available for small areal units such as census tracts or enumeration areas. Estimates may have to be updated in the years between censuses on the basis of population trends or from auxiliary data, such as assessment population statistics.

Estimates of future population size and geographic distribution should be available from local planning authorities. Where such projections have not been prepared at a sufficiently disaggregated level, or where their reliability has not been validated, population and household projections may have to be undertaken independently as part of the market analysis study.

Two further estimates are required in addition to population or household information. These are current income data and current expenditure data. Information on total income from all sources on a per household basis is available for decennial census years at a census tract level from Census Bulletins for the Census Metropolitan Areas. Other sources must be consulted to arrive at reasonable estimates where this specific information is not provided. Table 3-1 provides an example of how another source of data may be employed to arrive at reasonable estimates of per capita income both currently and for the future.<sup>1</sup>

---

<sup>1</sup> It was considered more appropriate to use examples selected from an official plan study rather than from a typical market analysis in this section of the report. In actual fact the steps, tables and conclusions are closely similar. The tables employed for purposes of illustration have been adapted from the draft official plan of Lakehead Planning Area. The Lakehead Planning Area comprises the City of Thunder Bay and the adjoining municipalities of Neebing, Paiponge, Shuniah, the Township of Oliver and the unorganized townships of Gorham and Ware. The Lakehead has been selected as one of the case-study municipalities in Chapter 4. The tables used here have been selected because of their representative nature, and the importance of the policy guidelines which have been developed from them.

\* now called Statistics Canada



TABLE 3-1<sup>(a)</sup>

PROJECTED PER CAPITA INCOME

LAKEHEAD PLANNING AREA

1966-1986

Year	Disposable Income Per Taxpayer (b) \$	Taxpayers as a Percent of Thunder Bay Population (c) %	Income Per Capita (d) \$
1966	4,698	39.6	1,860
1971	4,976	41.0	2,020
1976	5,256	42.0	2,210
1981	5,589	43.0	2,400
1986	5,813	44.0	2,560

Notes:

- (a) Source: This and subsequent tables in this Chapter appear in Appendix "C" to the Lakehead official plan, July 1970. In some instances the tables have been slightly altered to illustrate more clearly points being made in the text.
- (b) Source: From Taxation Statistics, Department of National Revenue, quoted in Fort William Downtown Urban Renewal Scheme.
- (c) Based on general trends in proportion of total population in the labour force.
- (d) Per capita income figures are estimated in real terms (constant 1966 \$) and represent an increase of 38 percent from 1966 to 1986.





Surveys of family expenditures published by the Dominion Bureau of Statistics provide data on the proportions of total family income which are typically expended on various classes of goods and services. Per capita expenditures on retail goods and services are also available from Dominion Bureau of Statistics census publications. These figures are available by trade categories every five years. Tables 3-2, 3-3 and 3-4 show the manner in which these data are used to estimate current and future potential sales on a per capita basis.

STEP IV
Analyse the competing centres in the trade area and their relative attractiveness in relation to the proposed centre

The central place concepts of geography and the classification of goods theory in marketing are useful in establishing potential trade areas and in assessing the competitive attractiveness of existing centres. Assumptions are made about the behaviour of the consumer in both concepts. For example, it is assumed that for some classes of goods customers will be willing to travel only a short distance to shop because of the "everyday" nature of the goods involved. In this case, trade areas will be relatively small. Travel distance will tend to increase for other types of goods that are purchased less frequently, and for which customers prefer to "shop around" to compare prices and styles. Stores of this type will tend to group into centres according to the distance or travel time involved. Specialty goods are a third class. These types of goods are purchased even less frequently and comparison shopping opportunities are vital for the customer. Specialty shopping areas tend to have very broad trade areas.

Classifications of goods in this manner lead to the idea of a hierarchy of shopping centres of increasing size, classified according to the range of goods and services offered for sale. It is usual for the goods



TABLE 3-2<sup>(a)</sup>

RETAIL SALES

LAKEHEAD PLANNING AREA

1966

Trade Category	Retail Sales (b) \$	Percent Distribution (c) %	Retail Sales per Capita (d) \$
Food	37,557,100	28	378
General	21,090,200	16	212
Automotive	41,888,600	32	422
Apparel	8,794,000	7	89
Hardware	5,673,000	4	58
Other	17,122,500	13	173
	<u>132,125,400</u>	<u>100</u>	<u>1,332</u>

(a) Source: Same as for Table 3-1

(b) Source: D.B.S., 1966 Census of Retail Trade

(c) Percentage share each trade category is of total retail sales.

(d) Calculated from 1966 population statistics, Lakehead official plan, July 1970, Appendix "B".



TABLE 3-3<sup>(a)</sup>

PROJECTED RETAIL SALES PER CAPITA

LAKEHEAD PLANNING AREA

1966-1986

Year	Disposable Income Per Capita (b) \$	Retail Sales Share of per Capita Disposable Income (c) %	Retail Sales per Capita (d) \$
1966	1,860	71.6	1,332
1971	2,020	69.0	1,392
1976	2,210	67.0	1,480
1981	2,400	65.0	1,560
1986	2,560	65.0	1,660

(a) Source: Same as for Table 3-1.

(b) From Table 3-2.

(c) Based on general trends in proportion of disposable income expended on retail goods and services at increasing levels of income suggested by Family Expenditures in Canada, D.B.S., 1969.

(d) Per Capita Retail Sales are calculated from columns 2 and 3 expressed in constant 1966 \$ and represent an increase of 25 percent from 1966 to 1986 in contrast to a 38 percent increase in income per capita (Table 3-1).



TABLE 3-4<sup>(a)</sup>

PROJECTED TOTAL RETAIL SALES POTENTIAL

LAKEHEAD PLANNING AREA

1966-1986

Year	Population No. (b)	Per Capita Sales (c) \$	Projected Total Retail Sales (d) \$	Projected Share of Total Sales	
				DSTM (e) Sales \$ (36%)	Food Sales (f) \$ (28%)
1966	113,000	1,332	150,516,000	54,185,760	42,144,480
1971	115,000	1,392	160,080,000	57,628,800	44,822,400
1976	122,000	1,480	180,560,000	65,001,600	50,556,800
1981	130,000	1,560	202,800,000	73,008,000	56,784,000
1986	138,000	1,660	229,080,000	82,468,800	64,142,400

(a) Source: Same as for Table 3-1.

(b) Source: Lakehead official plan, July 1970, Appendix "B".

(c) From Table 3-3.

(d) Projected Total Retail Sales are calculated from columns 2 and 3 expressed in constant 1966 \$. The increase in total retail sales is estimated at \$78,564,000 or an increase of 52 percent.

(e) DSTM represents Department Store Type Merchandise which excludes automobile, service stations, fuel dealers, etc., which are not relevant to the projection of future retail floor space requirements.

(f) Food sales are separated from other retail sales at this point because of the significant difference in dollar sales per square foot of retail floor space between DSTM and Food lines. Each of the two classes of goods, therefore, requires separate projections of future requirements.





and services offered in a "lower order" centre, e.g., a neighbourhood centre, to be offered in the "higher order" centres as well, e.g., in a regional shopping centre. For this reason there is competition between centres of the same size and competition between centres of differing sizes for some classes of goods and services. Centres may not dominate a single trade area but several centres may compete in one area because customers may prefer to shop in each of the centres under different circumstances.

The response of shopping centre developers and retailers to this characteristic of shopping behaviour may lead to a specialization of the goods and services offered by each of the centres of a given size or to a trend to build even larger centres to increase their attractiveness in a larger trade area at the expense of the retailers in the "lower order" centres.

Measures of the relative power of attraction of individual centres are highly subjective in nature and reflect consumer attitudes towards the objectives of the shopping trip and the distance that will have to be travelled to achieve those objectives. In some instances a measure of the absolute size of the centre may be used on the basis that the larger the centre the more stores it will have and the wider the range of goods it is likely to offer. As many as fifteen such measures of the power of attraction can be isolated, generally revolving around merchandise, price, store image or even physical comfort.

Travel distance to competing centres is also a factor in assessing a centre's relative attractiveness to customers. Travel time by auto along major roadways is one measure of distance. Others involve calculations of costs of travel, crow-flight distance, etc. As a consequence, the assessment of the attractiveness of competing centres requires exceptional judgment on the part of the analyst and a sound knowledge of those factors which influence customer decisions on where they shop and for which goods.

Where the competitive situation is highly complex there is some doubt that the multiple causes and simultaneous decision making which affect competitive strengths and weaknesses can be reliably maintained in the mind of the analyst.



#### STEP V

Survey consumer shopping habits in the trade area to determine the characteristics and attitudes of the shoppers, centre patronages, etc.

Surveys of consumer shopping habits in the trade area are used to identify the characteristics and attitudes of shoppers towards shopping activities and the consumer shopping habits. Surveys are typically conducted as home interviews using a stratified random sample because of the time and costs involved. Side-walk surveys have also been employed where only limited information is required. Because survey results are used in part to test the analyst's observations, the size of the sample employed may be relatively small. Where markets are complex and the social, economic and ethnic characteristics of the consumers vary broadly, more detailed surveys and a larger sample may be justified.

#### STEP VI

Estimate the share of the potential consumer expenditure in retail goods and services which will likely be attracted to the centre and translate this into retail floor space requirements by type of goods

Based on the information obtained Steps III, IV and V a judgment can be made on the potential consumer expenditure which will likely be attracted to the centre under study. The estimates of sales by types of goods and services can be translated into floor space requirements through the use of conversion factors. These are usually expressed as sales per square foot but care must be taken to distinguish between two commonly employed measures. In one



instance sales per square foot are expressed in terms of net selling space, in another in terms of gross enclosed space. Dollar sales per square foot are widely quoted but often insufficient attention is paid to whether these are expressed in net selling space figures or in gross enclosed space.

In Table 3-5 the transformation of Projected Total Retail Sales into Retail Floor Space Potential is accomplished by the use of average sales per square foot for food store sales and for Department Store Type Merchandise (DSTM) sales. Average sales per square foot as a measure have remained relatively constant for a great number of years. It has also been found that such figures are generally applicable over wide areas of the country. The Urban Land Institute averages employed in Table 3-5 indicate the DSTM sales in typical regional shopping centres in Canada amount to \$60 per square foot of gross enclosed floor space, and an average of \$100 per square foot for food sales. The averages include Canadian figures and their validity is widely accepted by market analysts and community planners. In most instances a low average is employed to provide a degree of conservatism in the results. Questions about their application to specific stores and specific sites can be raised. This introduces some additional uncertainty into the calculations but in the opinion of the users of these averages, this uncertainty is probably not critical to the final evaluation of site sales potential.

The draft of the Lakehead official plan makes clear that the allocation of additional retail floor space from 1971-1986, as shown in Table 3-5, is conditional on the size of centres thought appropriate to serve the needs of the additional population, on information available about the most economic sizes for shopping centre operation and on the share of retail business which it is felt will be attracted to the centres. Urban renewal scheme studies for the downtown areas of Fort William and Port Arthur (now Thunder Bay), suggest that 200,000 square feet of additional floor space should be provided in these downtowns up to 1981. At a lesser scale, in the Lakehead Planning Area, district centres of 50,000 square feet are planned to serve district shopping needs while local shopping



TABLE 3-5<sup>(a)</sup>

## RETAIL FLOOR SPACE REQUIREMENTS

## LAKEHEAD PLANNING AREA

1966-1986

YEAR	TOTAL FLOOR SPACE (b)			ADDITIONAL SPACE (d)		
	DSTM (\$0/sq.ft.) (a)	FOOD (\$100/sq.ft.) (c)	TOTAL	DSTM sq. ft.	FOOD sq. ft.	TOTAL sq. ft.
1966	903,096	421,444	1,324,540	-	-	-
1971	960,480	448,224	1,408,704	57,384	26,780	84,164
1976	1,083,360	505,568	1,588,928	180,264	84,124	264,388
1981	1,216,800	567,840	1,784,640	313,704	146,396	460,100
1986	1,374,480	641,424	2,015,904	471,384	219,980	691,364

(a) Source: Same as for Table 3-1.

(b) Calculated from Table 3-4. Estimates have been divided by the average sales per square foot shown.

(c) These figures were derived from figures published by the Urban Land Institute. The nature and use of these averages is more fully discussed in the text.

(d) Estimates of existing and approved floor space in the Lakehead for DSTM and food sales indicate an approximate balance will exist between the supply of retail floor space and the demand represented by retail sales potential. It has been assessed that 607,000 more square feet of retail floor space will be required between 1971 and 1986, an increase of 43 percent.





areas of 5-6,000 square feet will serve the purely local day-by-day needs. Requirements beyond these levels are to be met by expansion of the existing centres before any new regional shopping centre is to be considered.

#### STEP VII

Evaluate the findings of the trade area and market analyses in relation to the initial total size and floor space allocated in the contemplated centre and adjust as necessary

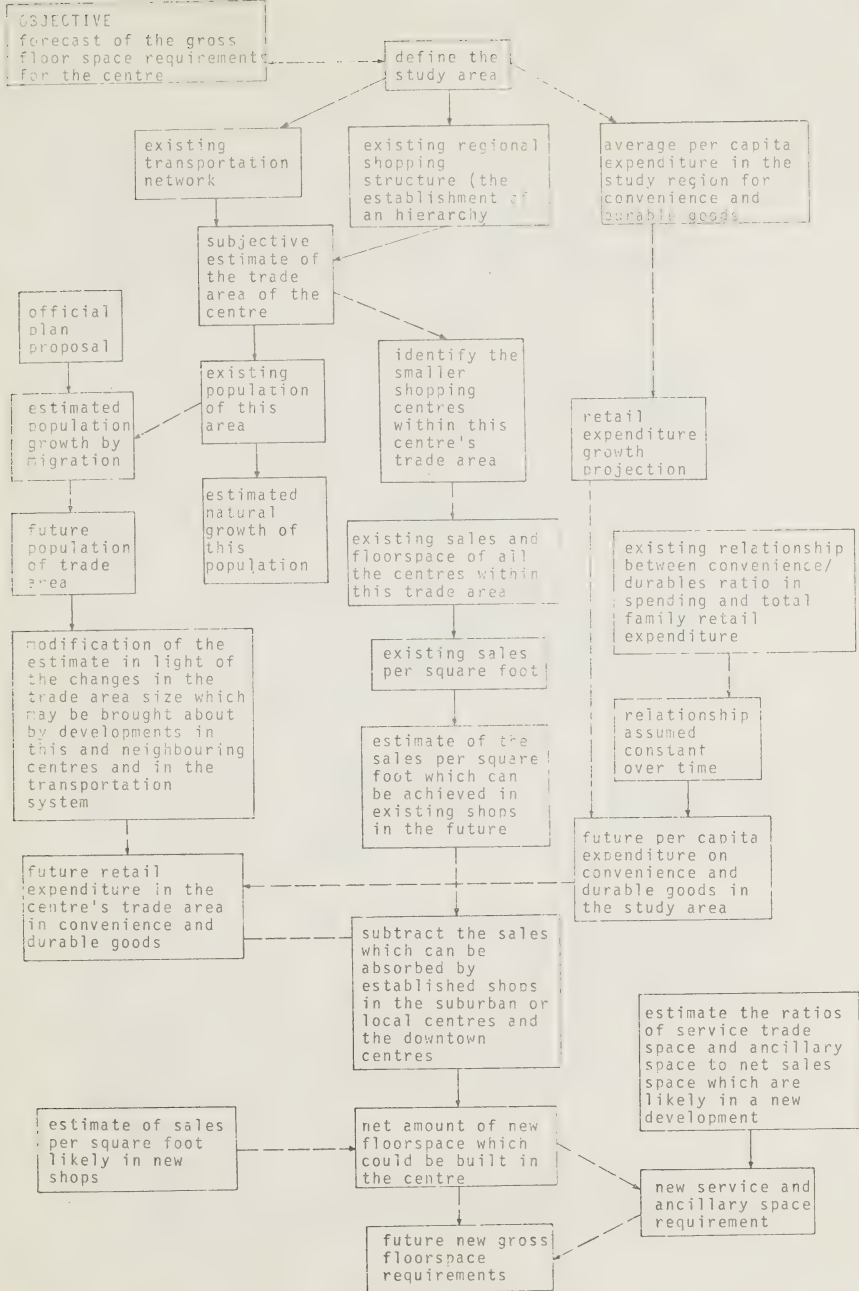
In the final step the findings of the trade area analyses are used to adjust the initial size estimates made in Step II. Recommendations can then be made about the size and allocation of space in the proposed centre by type of store.

#### A Further Illustration

Fig. 3-2 provides a further and more concise illustration of how the step-by-step approach to the study of retail floor space requirements may be employed in conjunction with official plan studies. If the process is followed from the top of the diagram to the final calculation of future new gross floor space requirements at the bottom, one can see how the official plan proposals, the transportation network, the hierarchy of centres, population forecasts, sales per square foot, etc. are all accounted for in the final result. One can see, for example, how the relationships between suburban or local shops and the downtown centre are resolved before the amount of new floor space is determined.

The diagram in Fig. 3-2 includes a step not previously mentioned. At the bottom right corner, estimates are provided of the amount of service space that will be required in relation to the basic amount of pure retail space. Service space includes such activities as barber shops, hairdressers, banks, post offices, libraries, trust companies, theatres, dentists, law offices, insurance companies, and the many other types of establishments normally associated with retail shopping





Source: Urban Models in Shopping Studies. London: National Economic Development Office, 1970.

Fig. 3-2: An Example of the Step-By-Step Approach for Official Plan Studies



both in downtown areas and in suburban centres. The importance of providing space for these activities, as well as for open space, benches, parking, landscaping, etc., is evident, particularly in face of an apparent reversion to the time when shopping was considered as much a social event as a commercial one.

### Uncertainties in Trade Area Analysis

The estimates of future floor space requirements on which evaluations of the impact of a new centre can be based are derived from a number of different sources. The reliability of the final conclusions depends, of course, on the accuracy, credibility and justification of each of the component studies and upon the subsequent compounding of any errors in these estimates in the steps which follow. If there is an element of uncertainty about the sample survey, for example, or the prediction of future per capita income, the resulting estimates obtained from the use of this data could be subject to errors of a very large magnitude. The case studies in Chapter 4 identify some of the areas of uncertainty in the estimates employed in reports presented to municipal officials and to the Ontario Municipal Board.

To ensure that the significance of these uncertainties will be clear, a further brief outline is presented which analyzes the risks involved in basing decisions on subjective estimates. These risks appear in each of the steps in trade area analysis and compound the problems of decision making.

In Chapter 2 it was suggested that there are three types of risk which can be recognized when decisions have to be made. Except under conditions of perfect knowledge, there are uncertainties connected with policy guidelines, with the information available or with the inter-relationships involved. Fig. 2-1 illustrated these uncertainties and suggested the typical reactions which are evoked when a group has to make a decision, usually a conscious choice between alternatives.

1. Where there is a lack of suitable policy e.g., when official plan statements are too vague, the reaction seems to call for more closely defined policy guidelines.



2. Where all the necessary information seems not to be available, the reaction is to call for more research or more studies.
3. When the inter-relationship between the decision to be taken and other related decisions taken previously is unclear, there is a call for more coordination.

It has been suggested that policy and inter-relational uncertainties can be reduced by careful official plan studies and the adoption of well-considered official plan policy statements. It has also been implied that informational uncertainties are reduced where a proper trade area analysis has been completed. These points have all been illustrated in relation to Lakehead Planning Area studies and briefly for Coventry, England.

Techniques are available for estimating the value of additional information in reducing risk. These typically employ Bayesian techniques which relate the expected value of the additional information to the benefits to be derived from it.

Additional problems are created when uncertainties of each type are compounded from one step to the next in the process of arriving at a final solution as to how much retail floor space will be required in the future. The procedure followed in the Lakehead Planning Area study can be simplified into a block diagram similar to that employed in Fig. 3-2. This diagram (Fig. 3-3) repeats in outline form what is contained in Tables 3-1 through 3-5. It is obvious that if there are errors in estimates, or uncertainties in the figures employed in the earlier steps, these will be accumulated through

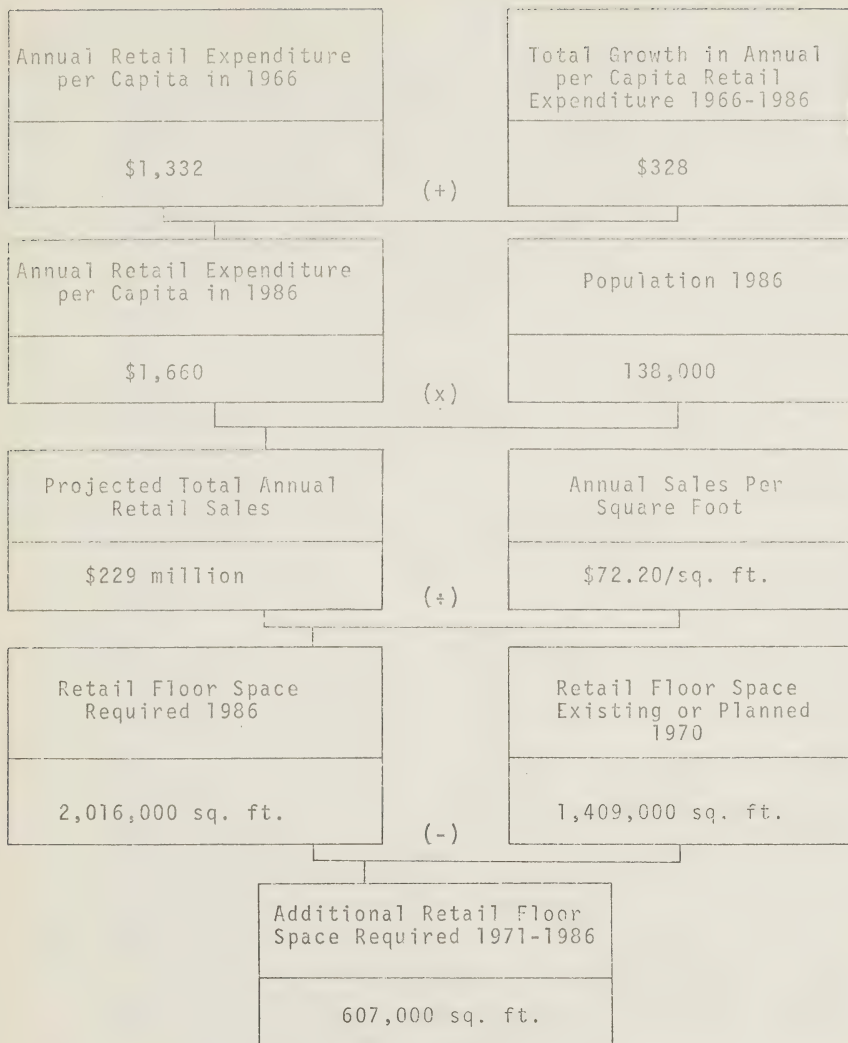
- 
- 2 Outlines of how Bayesian techniques may be employed in estimating the value of additional information may be found in marketing texts such as:

Seymour Banks, Experimentation in Marketing, McGraw-Hill Inc., 1965

Boyd and Westfall, Marketing Research, Richard D. Irwin, 1964.







Source: J. K. Friend and W. M. Jessop, Local Government and Strategic Choice. London-Tavistock Publications, 1969.

Fig. 3-3: Block Diagram of Calculation of Future Retail Floor Space Requirements.



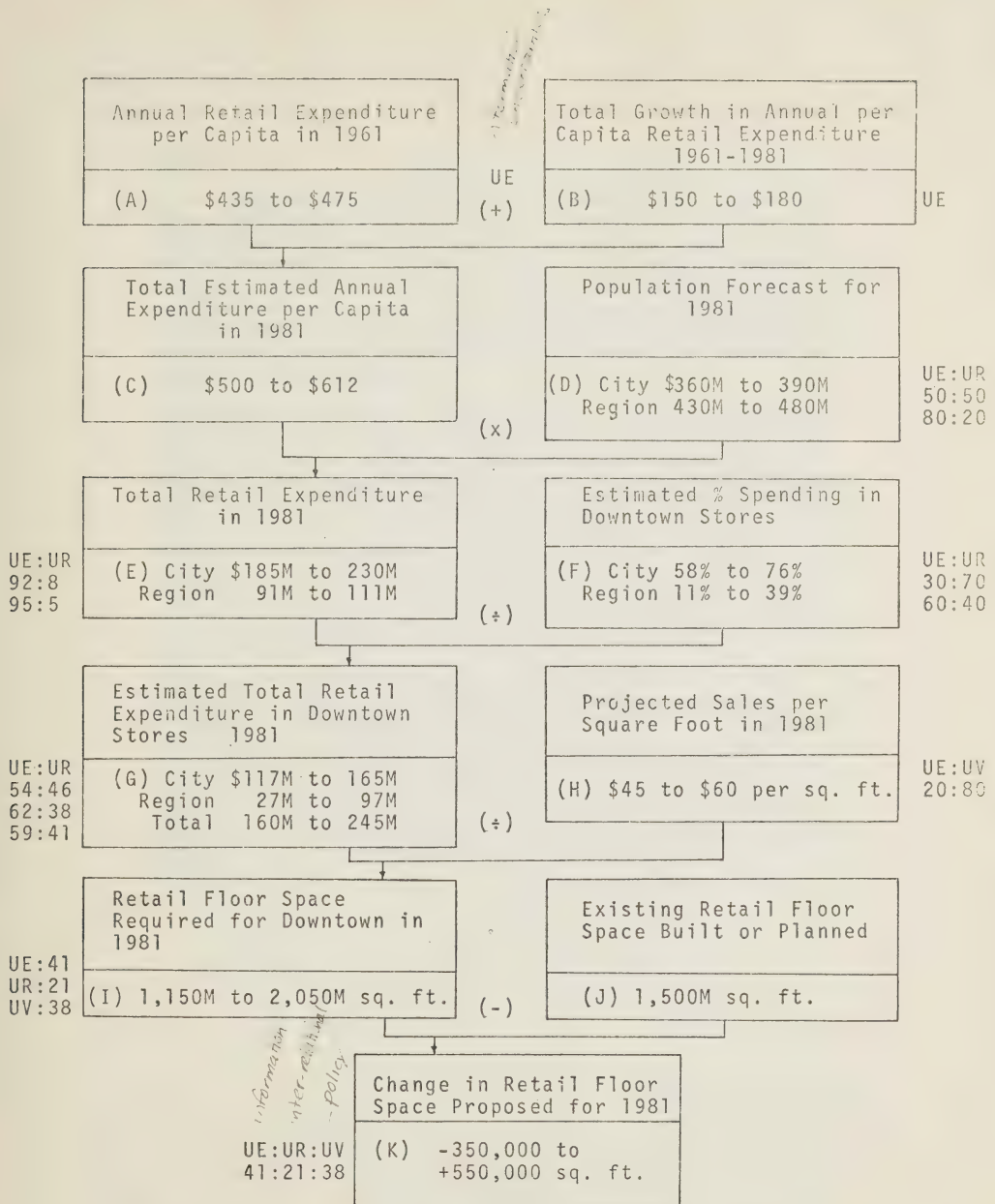
each of the subsequent estimations. Some of the estimates employed are based on policy decisions, for example, how many people are to be housed within the municipal boundaries. Some are inter-relational, as for example when estimates are prepared as to what proportion of the space should be provided in the downtown area and how much in the suburbs. Informational uncertainties are compounded if, for example, the total growth in annual per capita retail expenditures is based on a close guess rather than on detailed studies. In some cases more than one type of uncertainty can be detected in a single estimate.

In fig. 3-4 a similar analysis is presented in block diagram form. In this case, however, the estimates are stated as a range of figures reflecting the degree of uncertainty which can be considered as reasonable. Moreover, for each block the type of uncertainty associated with each estimate has been indicated. These are reflected by the symbols UE (information uncertainty), UV (policy uncertainty) and UR (inter-relational uncertainty). Where more than one type of uncertainty is associated with a range of estimates the probable degree of importance of each type is expressed as a percentage.

The techniques of risk analysis are then applied to arrive at the accumulations of risk which accrue at each step and how much of the uncertainty is associated with each type -- policy, information and inter-relational.

It is apparent from Fig. 3-4 that the recommended floor space change in the city centre can vary from a reduction of 350,000 square feet to an increase of 550,000 square feet. Moreover, the analysis suggests that 41 percent of the uncertainty is associated with informational uncertainty -- estimates of environmental or external factors, 38 percent policy uncertainties or value judgments, and 21 percent with uncertainties about intentions in related areas. The conclusion of this analysis is that in the case outlined in Fig. 3-4 the calculation of future floor space requirements is as much a matter for policy making as for the technical prediction by market analysts of retail potential.





Source: J. K. Friend and W. M. Jessop, Local Government and Strategic Choice. London-Tavistock Publications, 1969.

Fig. 3-4: Block Diagram of Retail Floor Space Requirements 1961-1981 for a City Centre.



## Conclusions

This chapter has outlined in a general way something about the methods of trade area analysis and the estimation of future retail floor space requirements for a community. It has sought to increase understanding of what sorts of studies are appropriate when assessing the potential of a proposed shopping centre development or in deriving official plan policies to guide the future growth and development of community shopping facilities.

It is apparent that even the most careful estimates of future floor space requirements by an experienced analyst involve risk and uncertainty. It would be well for community decision makers to be aware of the implications of these risks when arriving at a decision. The simple analysis of risks illustrated in Fig. 3-4 suggests the value in recognizing and evaluating in a conscious way all the risks that can be identified whether they arise in the process of establishing or adopting a policy, in assessing a specific proposal or in reading a report.

If Fig. 3-2 is now re-examined in relation to the relatively straight-forward but complex analysis attempted in the block diagram of Fig. 3-4, the extent of the effort required to make explicit all the uncertainties should become even more readily apparent. Decisions about the location of suburban shopping centres involve the assessment of these risks and a conscious acceptance of them by the community decision makers.





## CHAPTER 4

### THE CASE-STUDY MUNICIPALITIES

#### Purpose and Approach

This Chapter reviews two case-study municipalities in which applications for the establishment of new shopping centres have been subjected to extensive scrutiny. The purpose of the review is to identify the uncertainties the decision makers were aware of and thus, hopefully, provide some guidelines for those who must make similar decisions in other communities. The selection of the two municipalities was made on the basis of the availability of information, the completeness of the evidence which was presented at hearings and whether the centres approved were built.

The two cases are similar in that they both involved, initially, applications for centres in the rural municipalities on the periphery of large urban communities. In each instance the consequences were evaluated principally on the basis of the impact the application would have on urban renewal schemes for the central area of the cities involved. Extensive market analyses on the adequacy of planning policy guidelines of existing or proposed official plans were introduced into evidence. The decisions ultimately reached suggest differing bases for passing judgment and yet both imply important lessons for evaluating the impact of suburban centres on major Ontario cities.

The arrangement of the presentation of the available material on the case-study municipalities has been deliberately chosen to indicate the types of uncertainties or risks encountered in the evidence presented and to facilitate an evaluation of the ways in which decision making can be improved for the future. The presentations are also intended to illustrate the way current approaches to the evaluation of a potential



shopping centre site have been employed and the apparent deficiencies of these methods.

In each instance a brief resume is presented of the regional context and the spatial structure of the community, the structure of retail facilities, the issues raised, the evidence submitted, the basis of the decision reached and the situation as of August 1970 (the point at which gathering of material stopped).

A final section in the Chapter provides a synopsis of the case-study conclusions in terms of the planning decisions reached, the arguments presented, and the weight of evidence.

## The Lakehead Planning Area

### The Regional Context

Thunder Bay is at the centre of a sparsely settled hinterland, generally of a low income nature. The whole area is relatively inhibited from close contact with other major urban centres being, for example, 200 miles from Duluth, 300 miles from Kenora, 200 miles from Fort Frances and 400 miles from Sault Ste. Marie. As a consequence the region is reasonably self-contained and not subject to the pulls from other much larger centres. This is in contrast to much of central Ontario where the influence of very large cities such as Toronto, London, Ottawa and Montreal are of considerable consequence.

### The Spatial Structure of the Community

The Lakehead Planning Area (Fig. 4-1), with a population of about 110,000, is composed of a number of municipalities and townships centred on Thunder Bay at the head of Lake Superior. The City of Thunder Bay was created in 1970 from the twin cities of Port Arthur and Fort William. The bulk of the residential, commercial and industrial activities are located in Thunder Bay which is also the focus of the road, rail and air networks (Fig. 4-2).

It is anticipated that the duality provided by two former cities will continue for many years to come and that there will continue to be two central business districts



# THE LAKEHEAD PLANNING AREA



DEPARTMENT OF MUNICIPAL AFFAIRS  
COMMUNITY PLANNING BRANCH, 1971

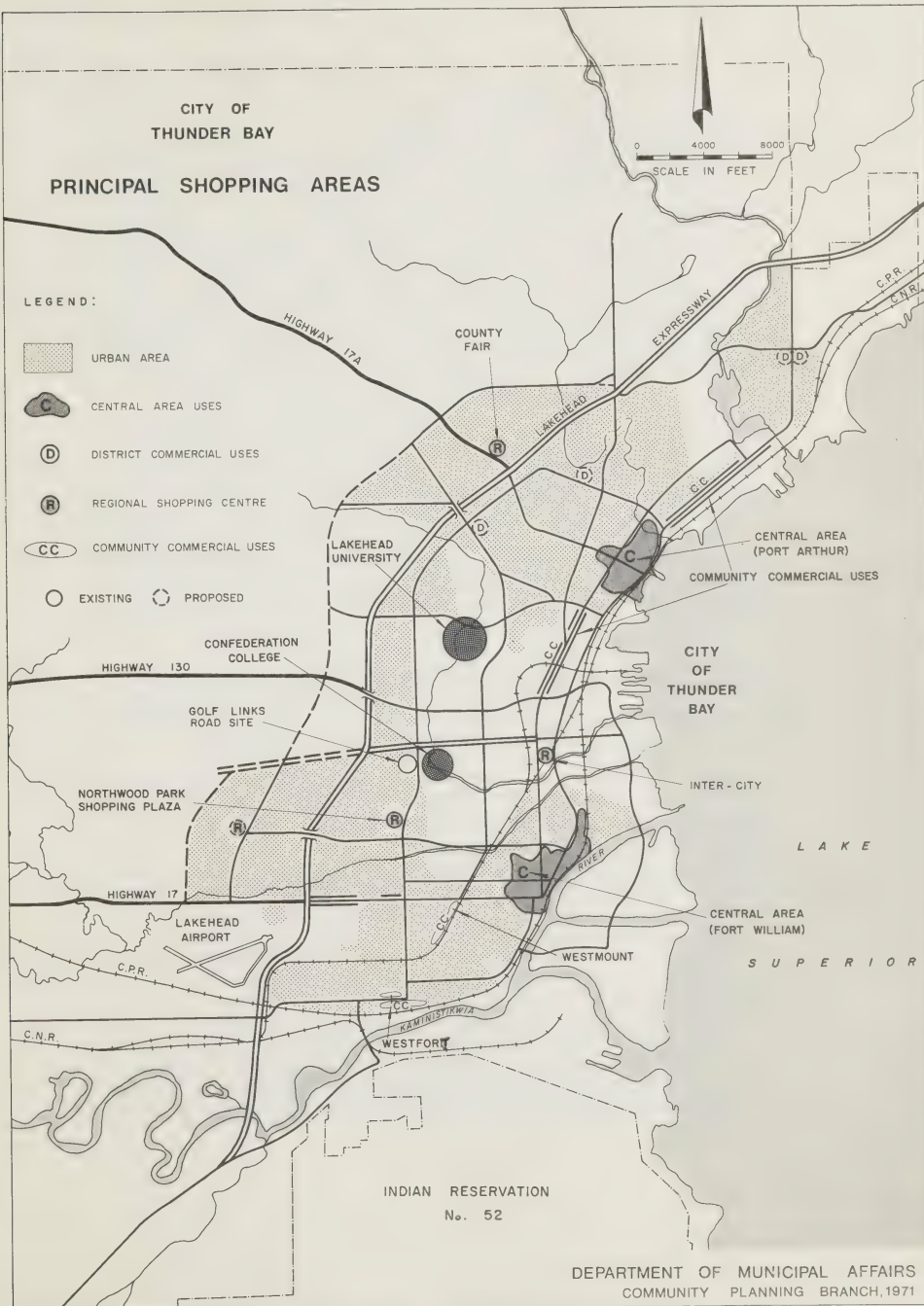


# CITY OF THUNDER BAY

## PRINCIPAL SHOPPING AREAS

### LEGEND:

-  URBAN AREA
-  CENTRAL AREA USES
-  DISTRICT COMMERCIAL USES
-  REGIONAL SHOPPING CENTRE
-  COMMUNITY COMMERCIAL USES
-  EXISTING
-  PROPOSED



DEPARTMENT OF MUNICIPAL AFFAIRS  
COMMUNITY PLANNING BRANCH, 1971





in Thunder Bay. The residential areas of the two former cities are to be brought together as a single urban community. Developments which would impede this general overall objective are to be discouraged. To achieve the integration of the community, it is proposed that region-wide institutional, cultural, and recreational facilities be located so as to provide convenient access from all points in the region, principally in the area between the two core areas. A major regional shopping centre Inter-City and Lakehead University are now so located and the policy guidelines are intended to implement the proposed pattern of urban growth and development. The hierarchy of roads is planned to provide suitable linkages based on the development concept.

The residential areas of Thunder Bay are made up of neighbourhoods, each based on the local elementary school and a local playground. Major collector roads serve as boundaries and internal street patterns are designed to discourage through traffic. Pedestrian walkways are encouraged to separate pedestrian and vehicular traffic and facilitate access to schools. Convenience goods stores are permitted in residential neighbourhoods in certain categories and in groups of up to 3 or 4 shops.

The principal industrial areas are located along the Lake Superior waterfront, on both sides of the Kaministiquia River on the southern boundary of the city and between the two cities in Inter-City area.

#### The Spatial Structure of Retailing

In addition to the major commercial areas in the two central areas, planned regional shopping centres are located at the Inter-City and County Fair sites, and a new centre, the Northwood Park Shopping Plaza, is being built on Edward Street in the Redwood Planning District (Fig. 4-2). It is the intention of the official plan that these centres continue to provide all the retail, service and office needs of a regional nature unless unanticipated changes in population growth patterns, personal disposable income on retail sales per capita justify a consideration of other retail locations. Shopping districts of an "unplanned" nature are located along major roads in the Westmont and Westfort areas of the Fort William section of Thunder Bay and along Municipal Avenue and Cumberland



Street in the Port Arthur section. In the official plan these unplanned centres are classed as Community Commercial Uses. Appropriate policies for the regulation of this class of centre are included in the plan.

### Resume of the Case

In July, 1967, Shuniah Township, one of the constituent municipalities of the Lakehead Planning Area on the boundary of Fort William (as it existed prior to 1970), approved an amendment to its official plan (Amendment No. 2) and a zoning by-law proposing the establishment of a suburban shopping centre at a location on Golf Links Road (Fig. 4-2). The City of Fort William and the Lakehead Planning Board raised immediate objections in August and September of 1967. The gist of the objections was that the proposed centre was not well located to serve as a regional shopping centre and that a nearby centre was already being built to serve the needs of the local residents. Extensive property to the east was owned by Confederation College effectively blocking development and access from that direction. No development was possible to the west because of servicing problems. It was also stated that the area had not been provided with water and sewer service, that the amount of land to be rezoned was excessive, and that substantial investment in alterations to the road pattern had already been made in the area in contemplation that a centre would not be built in the site area.

These arguments were contained in a letter from the planning board to the Community Planning Branch dated November 7, 1967. Ontario Municipal Board hearings were held on May 15, 1968 and again on September 10, 1968. The order of the Board, issued on the same day, September 10, dismissed the application.

### Review of Ontario Municipal Board Hearings

#### 1. The Matter at Issue:

The Ontario Municipal Board held a public hearing in Port Arthur on May 15, 1968 to consider the application of the Township of Shuniah for approval of an amendment to the official plan of the Shuniah Planning Area to change the designated use of the proposed site from Rural and Highway Commercial to a General Commercial



designation. This meeting heard from counsel for a number of interested parties and then adjourned. A further hearing was held on October 10, 1968 when submissions were presented from those supporting and those opposing the application. A number of issues were raised which are significant for this study. The Board concluded that the application should be dismissed.

## 2. Review of the Issues Raised:

The review of the evidence submitted to the Board can be conveniently discussed under four headings.

### a) Land Use Issues

The principal land use issue raised in the hearing revolved around the question of whether or not the application constituted a reasonable use. In this regard the Board was asked to consider whether there was a demonstrated need for the change in designation based on the needs of existing or projected population in the area to be served. The Board heard evidence that within the potential trading area of the proposed centre there was, or would be, little or no population increase beyond that which could be conveniently served by a shopping centre already approved less than half a mile from the proposed site. The Board also heard evidence that studies prepared for the new official plan for the Lakehead concluded that at this point in time there was already a surplus of land designated for shopping. The draft of the official plan proposed that no more centres be established until it could be shown conclusively that increases in population, income, or retail expenditure warranted an additional centre.

### b) Water and Sewer Services

The Board heard evidence from the Ontario Water Resources Commission that the Commission was concerned about the possibility of future residential development in this area of Thunder Bay. Their warning towards caution was based on the lack of sewer capacity, potential problems of septic tank run-offs because of soil conditions and a question about the water supply.



c) Roads and Traffic

The Board was informed that the establishment of a centre at the proposed location would be in direct contradiction to existing traffic patterns and plans for future road networks. The street plans were based on official plan studies and were intended to guide orderly growth and development. The road pattern envisaged was already committed in large part. Recent construction of arterial roadways and intersection improvements in the area of the proposed centre would be unsuitable to serve the site. The improvements would, however, be entirely suitable to meet the demands created by the development envisaged in the proposed official plan.

d) Submissions

The Board had before it a number of other submissions in addition to the usual documentation which accompanies a Board hearing, including such items as copies of by-laws, zoning regulations, etc. A copy of The Lakehead Local Government Review (The Hardy Report) was presented dealing with the structure of local government in the area and the proposed role of the Lakehead Planning Board. A copy of the report on the Fort William Downtown Urban Renewal Scheme was also submitted. This latter report provided guidance on future development of shopping facilities and the pattern of retail centres on which the scheme was based. Further evidence was presented of public opinion in the area affected by the rezoning.

3. Current Situation:

By August 1970 the proposed official plan for Thunder Bay had been approved by the Planning Board and forwarded to Council for their consideration and adoption. The shopping centre on Edward Street in the Redwood Planning District referred to previously (Fig. 4-2), "Northwood Park Shopping Plaza", was under construction.

Conclusions - Lakehead Planning Area

The Lakehead Planning Area case study provides a useful insight into the uncertainties described in Chapters 2 and 3. In this case the policy and informational





uncertainties have been reduced greatly by the existence of a draft of the official plan with its extensive policy statements and the market studies carried out as part of an urban renewal scheme included as Appendix C of the plan. The inter-relational uncertainties are also minimal because the official plan provides a clear description of the relationships which it is intended should exist between the retail and the balance of the community facilities at each level from local to the entire planning area. Further information on the draft official plan policy statements is available in the section which follows.

This case study also reveals the degree of control which is exercised on shopping centre locations by activities carried out under acts other than The Planning Act in Ontario. At least four such activities have been identified including those of the Ontario Water Resources Commission, roads and traffic, local government and urban renewal.

#### Official Plan Policies - Lakehead Planning Area

The Lakehead official plan, as proposed by the planning board, contains a number of significant policy statements about the future development of shopping centres of various sizes and functions. The statements provide very clear evidence of how municipalities may regulate and control growth to ensure that development will be orderly and in conformity with publicly adopted objectives. It is probably sufficiently clear, in view of the discussions in Chapter 3 on the use made of trade area analysis by the Lakehead Planning Board, that these policies are based on a relatively sound informational base.

The following are among the relevant policy statements which appeared in the draft Lakehead official plan in August 1970. The listing is not intended as a comprehensive guide to such statements. Rather they are included at this point as an example of how policy statements may be used to regulate shopping centre development within the context of an official plan. It seems obvious that they should serve to reduce policy, inter-relational and information uncertainties when decisions have to be made in the future on shopping centres.



Extracts from Official Plan of Lakehead Planning Area

Section 2.5: Regional Shopping Centre Uses

- 2.5.1 This designation applies to the existing Intercity and County Fair shopping centres, and to the proposed new shopping centre to be established on Edward Street in the Redwood Planning District, as designated on Schedule 'B'. The intent of this section is to provide for the use of these lands for retail activity, personal services and offices and to confine such activities of a regional nature to these three areas and the two downtown centres.
- 2.5.2 Consistent with the objective of the Official Plan to conserve the public and private investment in the two downtown areas and in the light of the economic projections contained in Appendices 'B' and 'C' of the Plan it is a policy of the Lakehead Official Plan to prohibit further regional shopping centres beyond those designated on Schedule 'B' unless an amendment to the Plan is prepared.
- 2.5.3 Such an amendment specified in 2.5.2 above will only be considered if it has been adequately demonstrated by the developer of the proposed centre that the need for an additional regional shopping centre is justified.

Any proposal in support of such a desired amendment shall clearly indicate to the satisfaction of the Municipality:

- (a) the justification for not establishing in one of the designated regional or downtown centres;
- (b) that additional retail floor space is justified by reason of unanticipated changes in population growth, personal disposable income and retail sales per capita;
- (c) that the proposed new regional centre will not have a detrimental effect on already designated regional centres;
- (d) that no undue transportation difficulties would ensue from the establishment of the proposed centre; and



- (e) that all other requirements of this Plan have been met.

\*\*\*\*\*

## Section 2.6: Community Commercial Use

- 2.6.1 Commercial uses outside the downtown and regional centres can be divided between highway and locally oriented uses. In most developed parts of the urban area local commercial centres already exist, although some are not yet completely developed, and some are larger and serve a wider area than the size proposed for future centres.

The intent of the Plan is to allow for the provision of adequate future community commercial centres, at the same time limiting their size so that they do not compete with regional and downtown shopping areas. It is considered that downtown, regional and some existing highway commercial facilities also serve as community commercial centres for residential areas in their immediate vicinity.

The community commercial designation is intended to apply to those shopping areas, both existing and proposed which are of larger significance than those permitted in the "Residential Neighbourhood" designation, but of lesser significance than those servicing the regional or comparison shopping market.

- 2.6.2 The symbols for community commercial use shown on Schedule 'B' indicate the general area within which such centres are or should be located, provided that:

- (a) each new community commercial centre should serve a population of approximately 10,000 persons located in the immediately surrounding area and the major tenant should be a supermarket;
- (b) new community commercial centres shall have a total enclosed floor space of between 40,000 and 75,000 sq. ft.;
- (c) existing community commercial centres should not be expanded beyond 75,000 sq. ft.;



- (d) they are located on arterial or collector roads, and preferably at the junction of these;
  - (e) the major permitted uses shall be retail trade and personal service use, offices and dwellings associated with these uses, provided they are located above or at the rear of business premises;
  - (f) they conform with the other policies of this Plan.
- 2.6.3 The municipality shall ensure compact community commercial concentrations by:
- (a) zoning for community commercial use those district centres indicated on Schedule 'B' that already exist;
  - (b) designating the precise location and extent of the proposed community commercial centres by community studies carried out prior to the development of new areas;
  - (c) approving applications for amendments to the zoning by-law to permit commercial uses in other locations only where the proposal is for an individual commercial building and the site is immediately adjacent to other commercial uses.
- 2.6.4 Automobile service stations will be allowed in community commercial centres when directly associated with other permitted commercial uses, provided that any such service stations:
- (a) are located only on the outside limits of a community commercial centre;
  - (b) do not detract from the amenity of nearby residential areas;
  - (c) no additional service access points are required.
- 2.6.5 Multi-family residential uses may be incorporated into community commercial centres if provided for in a properly planned coordinated scheme satisfactory to the municipality.





## The City of Belleville

### The Regional Context

Belleville is the centre of an area in eastern Ontario which includes the portion of Hastings County from Marmora, Madoc and Elvezir townships south and all of Prince Edward County (Fig. 4-3). Because of the convenience of Highway 401, the influence of Belleville as a trading centre reaches as far as Napanee in the east and Brighton in the west. Trenton is the only other sizeable centre in the region. Picton, Deseronto, Stirling, Frankfurt and Tweed are considerably smaller and serve mainly their immediate areas.

The area surrounding Belleville is essentially agricultural in nature and like most such areas is undergoing considerable change. Belleville is readily accessible from the region being the focus of a road network which includes Highways 2, 14, 37, 62 and 401.

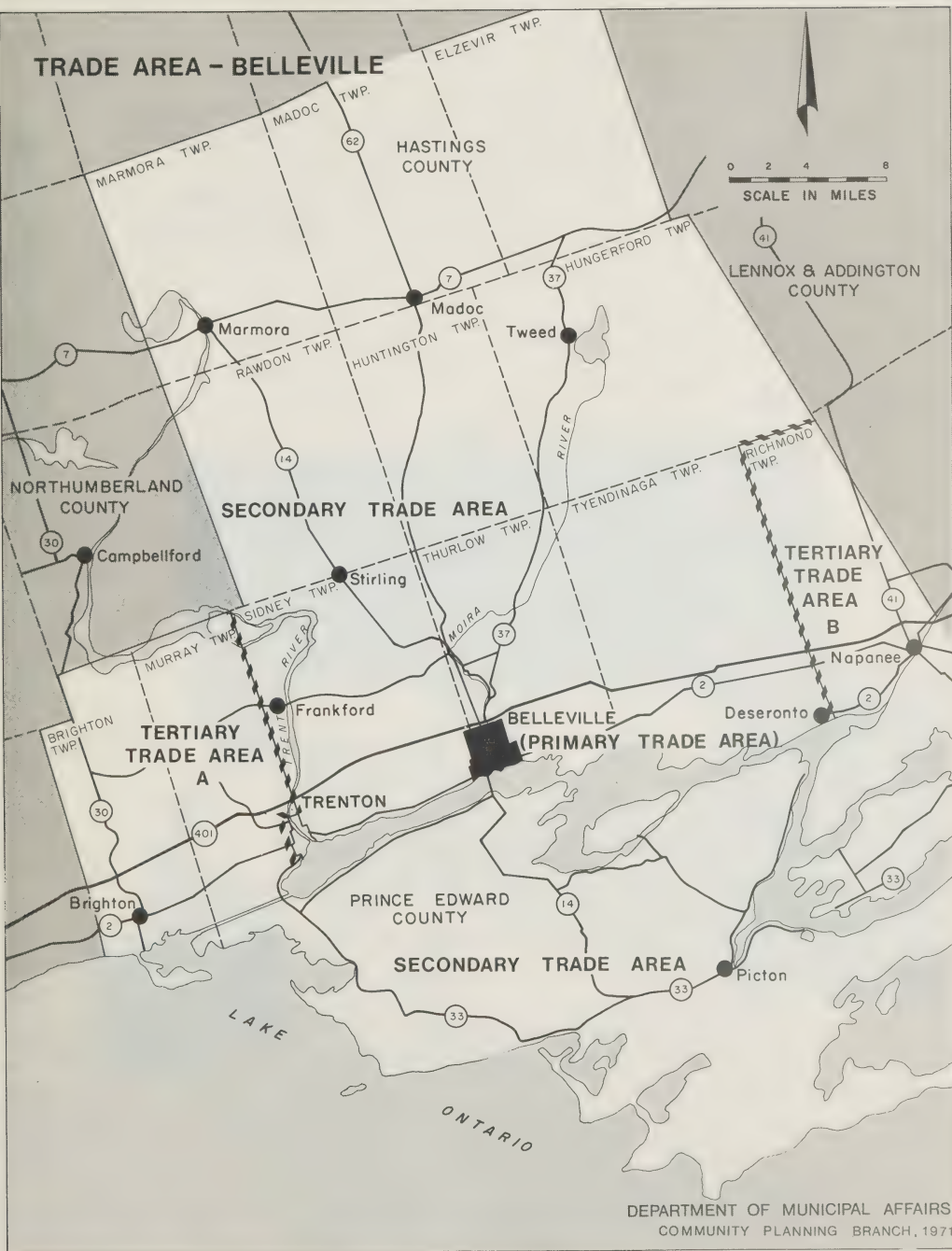
### The Spatial Structure of the Community

The City of Belleville with a population of about 33,000 is located at the mouth of the Moira River where it enters the Bay of Quinte (Fig. 4-4). The central business district is located on the east bank of the Moira at the junction of Highways 2 and 14. The MacDonald-Cartier Freeway (Highway 401) skirts the northern limits of the City. Highway No. 2, the old main provincial east-west traffic route, crosses the southern edge of the city via the central business district. Highway No. 14 bisects the city, following the west bank of the Moira River before continuing southwards, more or less parallel to the river via the central business district. There is an official plan for the central area of Belleville but the balance of the land was annexed only in 1959. No plan has been prepared so far for these perimeter areas.

The principal residential areas of Belleville are located to the south and east of the central area below the Canadian National Railway yards, to the west of the Moira River following the river on either side of Highway 14 and along the Bay of Quinte shoreline centred on Highway 2 towards the west. The river forms a definite barrier between the eastern and western sections with the majority of the crossings located



# TRADE AREA - BELLEVILLE



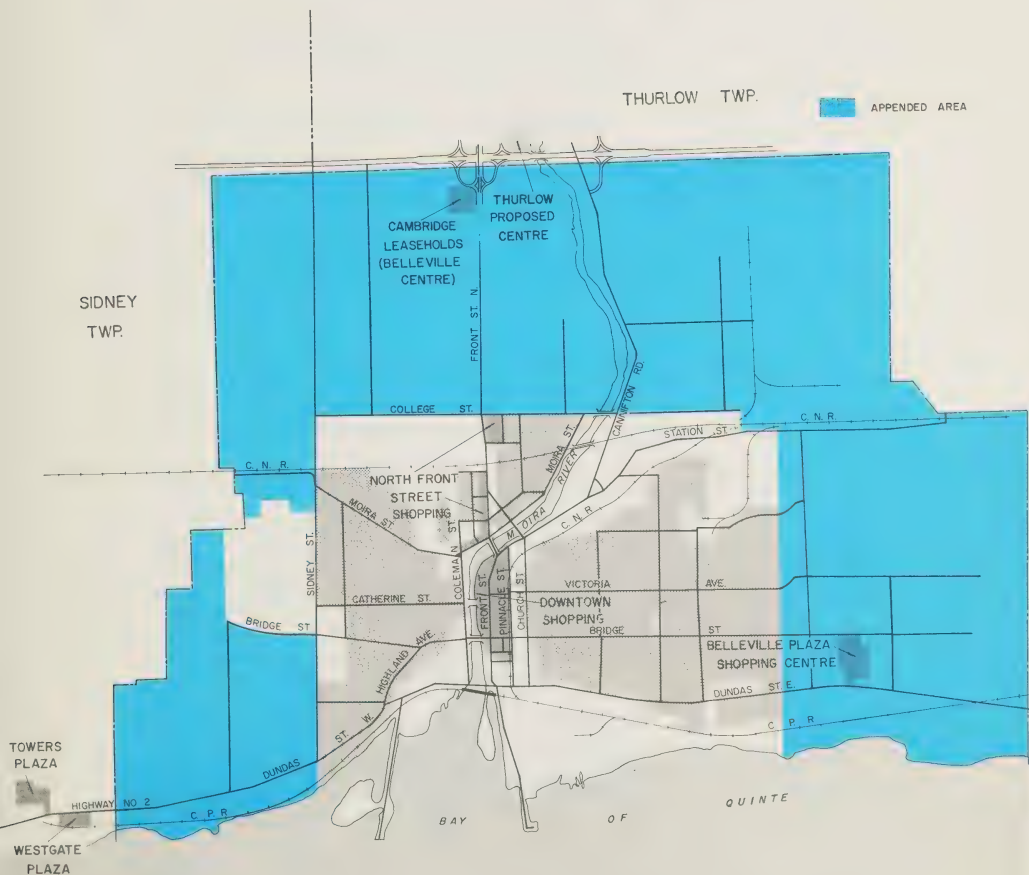
DEPARTMENT OF MUNICIPAL AFFAIRS  
COMMUNITY PLANNING BRANCH, 1971



0 2000 4000  
SCALE IN FEET

THURLOW TWP.

APPENDED AREA



DEPARTMENT OF MUNICIPAL AFFAIRS  
COMMUNITY PLANNING BRANCH 1971



only at the central area of the City. Some high density development has occurred adjacent to the central business district. Elsewhere housing is predominantly of a single-family, low-density type.

The older industrial areas are principally located along the Bay of Quinte, especially around the mouth of the Moira below the central area of the city served by the Canadian Pacific Railway and Highway 2.

New industrial areas are located in the north-eastern section of the city south of Highway 401 and above the Canadian National Railway tracks.

#### The Spatial Structure of Retailing

In addition to the facilities provided in the central business district, major suburban centres are located to serve the principal residential areas. Belleville Plaza on Highway 2 serves the eastern area, Towers Plaza and Westgate Centre the area to the west. The area north of the CBD and west of the Moira is served by a commercial area which stretches along Highway 14 from the Upper Bridge.

A number of small shops are scattered throughout the residential areas and typical commercial strip development has taken place along the major arterial roads, particularly along Highways 2 and 14.

#### Resume of the Case

In 1968 both Belleville and the Township of Thurlow, which lies immediately to the north and east of the Belleville city limits, were confronted with possible new suburban shopping centre developments within their jurisdictions. The Thurlow site was just north of Highway 401 to the east of Highway 14. The Belleville site was just south of Highway 401 on the west side of Highway 14 (Fig. 4-4).

Belleville referred their request for rezoning to the Belleville and Suburban Planning Board. The board notified surrounding property owners and requested comments from the appropriate officials. In February 1968, a motion was passed by city council authorizing





the preparation of a draft by-law permitting the rezoning and an agreement with the developer. The draft by-law was approved by council in July 1968 and subsequently amended at the suggestion of the Department of Municipal Affairs. This revised by-law was passed in November of the same year.

The subsequent Ontario Municipal Board hearing took place in February 1969 after several adjournments and was completed in seven days. Arguments before the Board hinged largely on the adequacy of the available information rather than on the suitability of the site. The Board order dismissed the application because the by-law and its implications had not been sufficiently studied.

In July 1968 the Council of Thurlow passed their first restricted area by-law to regulate the use of land. The by-law came before the Ontario Municipal Board for approval. In the Board's decision only temporary approval was given to that portion of the by-law south of Cloverleaf Drive in which the shopping centre site was located. Council was requested to give further study to the zoning of this area and to allow any owner who might wish to do so to supply the council with plans for the development of the area.

Subsequently both Belleville and Thurlow applied under section 42 of The Ontario Municipal Board Act for a review of the decisions of the Board. A new hearing was ordered in June 1969. Since the issues appeared to be similar to both applications it was decided to consider both matters together. The hearing was held in February 1970 and the Board decision was handed down in April 1970. It upheld objections to a shopping centre in Thurlow on the basis of inadequacy of services, the lack of regulating safeguards and the mixture of land uses permitted in the zoning category. The Belleville rezoning was approved, the Board being satisfied that on the basis of the economic and planning studies presented the shopping centre should now be built.

#### Review of Ontario Municipal Board Hearings

##### 1. The Matter at Issue:

In February and March of 1969 the Ontario Municipal Board heard applications from Belleville and Thurlow



for approval of zoning by-laws. The Thurlow by-law was the first passed by that municipality to regulate the use of land. The Belleville by-law proposed a new zoning category to regulate the construction and operation of a major shopping centre.

The major portion of the Thurlow by-law was approved by Board order on March 24th except for an area of the township west of Highway 14 just above Highway 401 which was given only temporary approval. An application was made by Thurlow under section 42 of The Ontario Municipal Board Act for a review of the decision of the Board because the zoning by-law permitted a shopping centre to be located in the area given temporary approval. In fact a building permit had already been issued for a centre in this zone. Subsequently a by-law was passed by the municipal council to exclude shopping centres from the permitted land uses in the relevant zoning category in the township.

The Board order of March 14, 1969 dismissed Belleville's application for approval of their amended zoning regulations which would have permitted the construction of a shopping centre west of Highway 14 just below Highway 401. The basis for rejection reflected a number of uncertainties about the population forecasts, the trade area analysis and essential planning studies on which policy decisions could be made. The transcript of the evidence presented at the hearing has been of particular importance to this study.

A petition was made by a substantial number of Belleville citizens to the Lieutenant Governor-in-Council to rescind the Board's order, requesting approval of a rehearing. A new public hearing was directed. As a consequence of subsequent procedural motions it was eventually directed that the Belleville and Thurlow applications be heard together. In the meantime additional reports were received on the future of the downtown urban renewal schemes in Belleville and the retail potential of the proposed Belleville shopping centre site. The contention was that the discrepancies noted in the previous application were corrected and the required planning information was now available to indicate how the new centre fitted into the overall development of the municipality.



Following a new hearing of the Ontario Municipal Board into both the Thurlow and Belleville applications, from February 2nd to 9th, 1970, the Board agreed in its order of April 23, 1970 that a shopping centre in the Thurlow Township site was unwarranted because of the lack of services, inadequacy of regulatory safeguards and the mixture of permitted uses in the zoning category. The Board further concluded that the centre in Belleville could now proceed because Belleville appeared to have sufficient control over the situation to ensure that the centre would be built in a proper manner and that the requisite economic and planning evidence had been produced.

## 2. Review of the Issues Raised:

An evaluation of the evidence submitted to the Board in all three hearings can be conducted under the four major categories of land use issues, marketing issues, general development and regulatory controls, and site considerations.

### a) Land Use Issues

One of the major concerns of the Ontario Municipal Board throughout the proceedings was with regulatory safeguards and the availability of official plan policies which were mentioned as an important factor to be taken into consideration when dealing with zoning by-law amendments. The fact that neither Belleville nor Thurlow had official plans covering the areas under consideration placed the Board in the position of having to approve or disapprove the mapping out of the future development of the municipality without the benefit of adequate policy guidelines. The importance of official plan guidelines for development is further underscored in the hearings by the reliance placed on Belleville's Central Area Urban Renewal Scheme First Interim Report. This study provided the only real evidence of the role and potential of the downtown shopping area. This policy risk was clearly recognized by the Board to the degree that the decision of the first hearing was influenced by the uncertainties introduced by a lack of any policy guidelines.



b) Marketing Issues

In the first Belleville hearing, evidence was produced to show that there was an unsatisfied sales potential in Belleville and that if additional attractive floorspace was added Belleville could compete for an increased share of the regional market tapped by Peterborough and Kingston. A trade area analysis had then been submitted and this was subjected to searching scrutiny by counsel. A number of discrepancies were uncovered. The population projection figures were attacked, for example, because of an apparent upward bias in the projections for the early years of the planning period. Submissions at the second hearing were substantially in agreement upon population projections. As a result, this key area of uncertainty was reduced to the satisfaction of the Board.

In looking back over the transcripts of the hearings, it is now apparent that more information could have been presented to indicate the risks involved in adopting a higher or lower population figure than those that fall in the 'most probable' range. Reductions of uncertainties in this area would have the benefit of focusing attention on ways of phasing development where population growth is more erratic than the 'smoothed' curves of most population forecasts would suggest. It is probably fair to conclude that there is as much risk to the municipality in adopting overly optimistic projections as there is in consistently accepting much lower figures. This is particularly obvious in the case of suburban shopping centre development.

A second area of concern to counsel was the accuracy of the floor space estimates used to calculate the potential for additional retail floor space. Some confusion arose at the first Belleville hearing which, when added to the uncertainties over the population projection, increased the apparent risks to the municipality to the point where the Board was influenced in its decision. In the second hearing great care was shown in the way in which floor area estimates were made and recorded. The level of apparent risk was largely eliminated by the provision of adequate information.





c) General Development and Regulatory Controls

Three issues were raised at the hearing, particularly in the evidence given by the Director of Planning. The first explored the further implications of the need for a satisfactory population projection as the basis for all aspects of an official plan study. As has already been noted, much was made in the first Belleville hearing of the critical nature of the population projection on calculations of sales potential both for the city and for the trading area beyond. Furthermore, any uncertainties about population projections will have a strong influence on general development proposals and, as a consequence, will have an impact on the inter-relational uncertainties when plans are formulated in respect to the scale and nature of a suitable hierarchy of retail centres to meet consumer shopping needs.

The second issue concerned development policy and the extension of sewer and water services to neighbouring municipalities. The extension of these services is largely a matter for discussion with the Ontario Water Resources Commission and provides a means of ensuring that premature development of suburban shopping centres across municipal boundaries will not proceed without the benefit of safeguards. This appears to place a burden on the Ontario Water Resources Commission which was not intended and could in effect be interpreted as an abandonment of normal planning responsibility by the communities involved. Lack of safeguards against the development of shopping centres in adjacent municipalities increases the risk even for those communities that have adopted completely satisfactory official plans and by-laws.

The third was an expressed concern in both hearings about the adequacy of the regulations under which an agreement would be entered into between the municipality and the shopping centre developer. Among the restrictions which are mentioned by the Board as appropriate in such agreements are ingress and egress, siting, size of development, buffering, lighting, height and parking. The lack of a firm policy on an adequate regulatory device such as this weighed heavily in the decisions on Belleville and Thurlow. In its final summation and approval of the Belleville by-law, some dissatisfaction can still be detected in a reference to the by-law as still having been not tied down in all respects.



The importance of the population projection and its influence on general development proposals and the secondary influence on each of the components of the plan can hardly be given enough emphasis at this point. The uncertainties and risks to everyone concerned with suburban shopping centres when projections are not carefully "buttoned down" are cumulative through the whole process of decision making. Communities with a lust for growth and ambitions beyond their readily achievable objectives introduce serious elements of uncertainty into even the simplest kind of choice between alternatives.

d) Site Considerations

There was general agreement at the hearings that the site finally selected in Belleville was ideal for the purpose, readily serviceable with sewer and water, and that no traffic problems were anticipated.

The property abuts on a provincial highway. The power of the Department of Highways to exercise control over some aspects of the development seemed to be reassuring to the Board. This reflects a further reduction of uncertainty and risk because of the availability of additional regulatory safeguards.

3. Current Situation:

The shopping centre approved in the Belleville hearings was under construction by the fall of 1970. In the meantime a site for another centre appears to have been acquired in Sidney Township immediately to the west of the Belleville boundary on Highway 2. The building of a further centre in Belleville would not appear to be justified on the basis of the information presented at the Belleville hearings in February 1970. Such uncontrolled action would seem to increase the risks for all other centres, for Belleville City Council and for the residents of the community at large.

Conclusion - Belleville

The Belleville case study has identified quite clearly the problems of policy, informational and inter-relational uncertainties. The uncertainties caused by lack of an



official plan seemed crucial in the first hearing and were only partially reduced in the second by introduction of a First Interim Report of the Central Area Renewal Study. Other specific uncertainties involved inadequacies in the informational base, in the methodologies employed, in the population assumptions and in the relationship of shopping in Belleville to other community activities.

The consequence of these uncertainties was to increase the risks for the decision makers. The long and costly hearings resulted in very serious questioning of all aspects of the proposals in a sincere effort to reduce the risk for the community, the developer, the shopping public and the principal tenants. It would seem from the Belleville experience that these risks should be recognized from the outset. Standard information requirements could be developed which would ensure that in all cases decisions are made under conditions in which uncertainties are reduced to an acceptable minimum.

This conclusion would seem to be particularly valid for communities that have adopted strong programs to increase job opportunities within their area. A record of sound, stable decision making procedures at a municipal level and the existence of a good quality, updated official plan are two of the essential conditions to provide an image of low risk and minimum uncertainty. Suburban shopping centre developers too are concerned with finding opportunities for maximizing the returns on their investments at the lowest possible levels of risk. Unless steps are taken to ensure that uncertainties like the ones which have been uncovered in this brief case study are recognized and resolved, investments may be made which are at the extreme limits of risk. Such investments imply an assumption of high risk levels by the community as well.

#### Conclusions - The Two Case Studies

The two case studies have attempted to identify a selected number of the key issues which weighed heavily in the decisions of the Ontario Municipal Board on suburban shopping centre locations.

- a) It seems reasonable to conclude that much of the uncertainty about location is overcome if each municipality adopts and implements suitable policy



guidelines which indicate how much retail space is required, where it should be located and when it is anticipated it will be needed.

- b) It also seems that the kinds of information which are required when making a decision in a suburban shopping centre location are also the same kinds which are essential to the development of policy guidelines that are normally included within an official plan. If the studies are done once, and done well, they can serve a multiplicity of purposes.
- c) A number of the constituent studies that enter into the preparation of an official plan may be conducted effectively by real estate or economic consultants. However, the preparation of policy guidelines for growth and development is a matter for the urban and regional planner. Market studies are an essential component of good planning but are in no way a substitute for it.
- d) The discussion concerning the reduction of risks in approving a suburban shopping centre on a given site has assumed that the knowledge and experience of the market analyst, the developer and the retailer provide the best way to judge the market potential for the centre and its ability to make an impact on the area. Such procedures seldom consider alternative competing locations nor do they specify the actual loss in sales which may be suffered immediately by existing shopkeepers in downtown and competing centres. The total cost to the community is not calculated very often nor are the items of cost identified in the submissions made. The gross benefit to the community in terms of jobs and assessment is regularly measured, but the true net cost in dollar terms and in social terms is ignored. Advanced techniques have been employed in other jurisdictions to evaluate the impact of a proposed centre on the existing centres or to choose between alternative proposed locations. Moreover, it seems obvious that uncertainty and risk could be further reduced if the true social costs and benefits of additional centres could be identified in those communities, such as Belleville and Thunder Bay, where new centres are being built. If the anticipated consequences of a new centre can be measured before the opening of the centre and at intervals for a period thereafter, uncertainties for other communities at other times can be better evaluated and further reduced.





## CHAPTER 5

### ALTERNATIVE METHODS FOR ASSESSING IMPACT

#### The Retail Gravity Models

The previous chapters have assumed that the methods of trade area analysis were the accepted way of measuring the impact of new suburban shopping centres. It was noted that the methods are centre oriented. In other words, they take the view of the shopping centre retailer looking outwards to the area around him from which his trade is drawn. Some of the problems and risks in this way of studying shopping centre location have been discussed.

There are other ways of approaching the problem of retail location. Among the most widely used of the alternative methods are "retail gravity" models. These methods are consumer oriented, as opposed to the retailer oriented methods of trade area analysis. In this view, the customer is seen as being attracted to each of the shopping centres accessible to her. She appears to be more attracted to larger centres. Moreover, the power of the attraction tends to decline as the distance to the centre increases. The probability that the consumer will shop at any given centre is seen as being determined, in large measure, by the attraction of that centre relative to the attraction of all the other centres and by the distance or travel time to that centre relative to the distance to all the other centres.

The first simple formulations of the gravity concept in marketing were developed by Reilly and called Reilly's Law of Retail Gravitation. He was concerned with the problem of determining the relative attraction of two towns to people who lived in an intermediate point between them. He stated simply that the frequency with which residents of the intermediate point will shop in either of the two towns is directly proportional to the populations of the towns and inversely proportional to the square of the distances to each town.



Numerous modifications were tried out to make Reilly's Law more useful and workable. Differing variables were introduced for the "attractiveness" and "distance" factors and some work was done in varying the power to which the distance factor was raised from the square of the distance to other powers. More sophisticated mathematics was introduced to account for competition between a large number of towns and a large number of intermediate points.

In recent years the urgent need to be able to assess the impact of new suburban shopping centres on downtown areas and on existing retailers has led to a much more serious approach to developing alternatives to the methods of trade area analysis. A number of new formulations of the retail gravity model have appeared, each providing an enhanced ability to assist the trade area analyst, the planner and the municipality in deciding on matters of retail location.

It would be unwise, at this point, to make any vast claims about the power, validity and conceptual niceties of retail gravity models. It is clear that they provide a very useful tool in assessing how much business will probably be attracted to a new centre of a given size, at a given location and how much will probably be lost in each of the other centres. They are also useful for estimating future floor space requirements and for evaluating the consequences of any number of alternative spatial arrangements for new centres to meet the added demand.

The specific formulations of these models are stated in mathematical form. It is not the purpose of this report to provide a precise explanation of the computations involved since computer programs have been written which simplify the use of the gravity techniques. Suitable references to the methodologies and applications



are provided in the<sup>1</sup> Appendix for those who wish to explore the matter further.

### Outline of Methodology: An Illustration

The methodology identifies consumers living in given areas (zones), with specified per capita expenditures on shopping goods, and shopping centres located at precisely defined points. The "attractiveness" of the centres is assumed to be some function of their size offset by the deterrent of distance between the zone of residence and the shopping centre location. Fig. 5-1 shows in block diagram form a simplified version of how a retail gravity model functions, what data inputs are required, and what results can be obtained.

To further illustrate the use of the retail gravity model a series of tables has been prepared showing the input data and the outputs from the model at each stage of computation. The data in the tables are not based on an actual case study. They are hypothetical,

---

<sup>1</sup> The formulation of the retail gravity model takes the general form,

$$S_{ij} = C_i \frac{(A_j)^\alpha}{(d_{ij})^\beta}$$

$$\sum_{i=1}^n \frac{(A_j)^\alpha}{(d_{ij})^\beta} \propto \frac{(A_j)^\alpha}{(d_{ij})^\beta}$$

Subject to,

$$\sum_{j=1}^n S_{ij} = \sum_{i=1}^n C_i$$

and

$S_{ij}$  = the sales attracted to a centre (j)  
from a zone (i)

$C_i$  = the retail expenditure in a zone (i)

$A_j$  = a measure of the attractiveness of  
centre (j)

$d_{ij}$  = a measure of travel time or cost  
from zone (i) to centre (j)

$\alpha, \beta$  = parameter values



but typical. Table 5-1 indicates how many people live in each zone in the imaginary town, their per capita income and the related average per capita expenditure on retail goods. Table 5-2 displays the information collected about each centre including its size in square feet, the number of shops, the total employment and the number of different types of shops represented in the centre.

Table 5-3 shows the estimated number of customers attracted to each centre from Zone No. 7 and the dollar sales that would be generated at each centre if the assumptions about the relative attractiveness of each centre in relation to the population, distance and income of the zone were correct. The predicted sales for all the centres can then be calculated by summing each of the zonal projections. By a series of adjustments the distribution of predicted sales can then be brought into a close approximation of the observed pattern of shopping behaviour as reflected in actual sales at each centre (Table 5-4).

To ensure that these calculations will be valid for making predictions of future retail floor space requirements, the model can be adjusted to actual sales conditions at one point in the past, say 1961, and then new data put into the model representing a current year, say for 1966. The output of the second run will show how well the model has been able to predict 1966 conditions. The accuracy of this prediction can be stated in statistical terms so that the reliability of the model in forecasting may be determined with some precision.

Once a calibration of this type has been accomplished, the model should then provide a very powerful tool for estimating the impact of the introduction of a new centre into the system. For example, if population size, distribution and income levels remain unchanged, and no other centres are built, one can measure the share of retail sales which would be attracted to the new centre and the effect this would have on the remainder of existing centres. Table 5-1 remains the same but Tables 5-2, 5-3 and 5-4 would change as shown in Tables 5-5, 5-6 and 5-7. Table 5-7 now gives a clear indication of the impact of the new centre at the proposed site on the balance of the sites. The new centre would





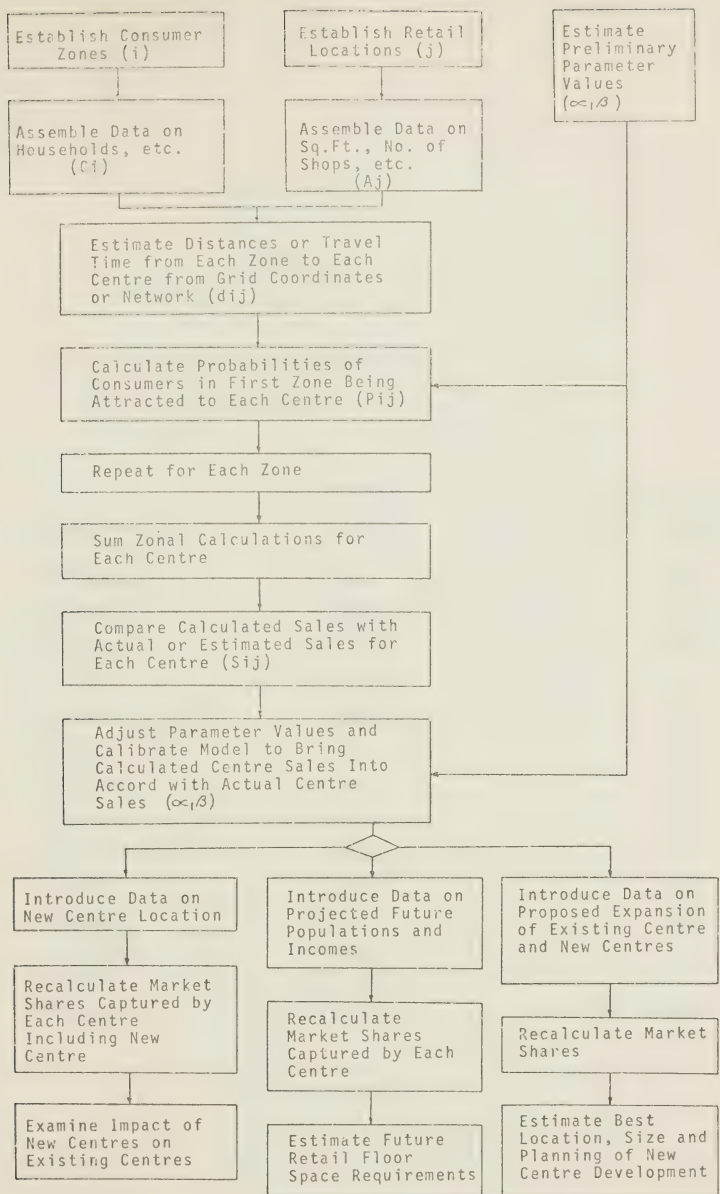


Fig. 5-1: Simplified Block Diagram of Retail Gravity Model



TABLE 5-1

RETAIL EXPENDITURE

HYPOTHETICAL CITY

1966

	<u>Population</u>	<u>Average Per Capita Income</u>	<u>Estimated Retail Expenditure Per Capita</u>
1	11,080	\$1,430	\$900
2	14,950	1,052	670
3	4,320	3,660	2,200
4	6,570	1,710	1,080
5	6,250	1,200	750
6	9,060	970	630
7	18,130	1,000	970
8	11,800	950	650
9	12,300	900	580
10	13,990	970	630
11	10,500	930	640
12	5,050	950	650
Totals	124,000	\$1,156	\$790



TABLE 5-2

SHOPPING CENTRE CHARACTERISTICS

HYPOTHETICAL CITY

1966

<u>Centre No.</u>	<u>Centre Name</u>	<u>Gross Enclosed Floor Area</u>	<u>Number of Shops</u>	<u>Total Employment</u>	<u>Number of Shop Types</u>
1.	Northdale	358,800	41	102	21
2.	Southdale	140,200	28	75	16
3.	Downtown	963,000	85	450	37
4.	Eastdale	167,600	31	88	18
5.	Westdale	106,800	17	45	12



TABLE 5-3

ESTIMATED SHARES OF RETAIL SALES

ATTRACTED TO CENTRES FROM ZONE 7

HYPOTHETICAL CITY

1966

		<u>ZONE</u>	<u>POPULATION</u>	<u>PER CAPITA RETAIL EXPENDITURE</u>		
		7	18,130	\$970		
<u>Centre Number</u>	<u>Size in Sq. Ft.</u>	<u>Distance Measured in Travel Time (No.)</u>	<u>Number of Customers Attracted to Centre</u>	<u>Estimated Total Expenditure at Centre (\$)</u>	<u>Percentage Share of Total Zonal Expenditure (%)</u>	
1	358,800	19.51	1,123.2	1,089,500	6.2	
2	140,200	15.46	553.7	537,100	3.1	
3	963,000	4.14	14,197.4	13,771,500	78.3	
4	167,600	6.92	1,477.6	1,433,300	8.2	
5	106,800	8.38	777.9	754,600	4.2	
Totals	1,736,400		18,130.0	17,586,000	100.0	





TABLE 5-4

SUMMARY SITE INFORMATION

HYPOTHETICAL CITY

1966

Centre No.	<u>NUMBER OF CENTRES</u>		<u>NUMBER OF ZONES</u>		<u>PER CAPITA RETAIL EXPENDITURE</u>	
	5		12		\$790	
	Centre Size (Sq. Ft.)	Number of Customers Attracted	Total Retail Expenditure Calculated (\$000's)	Actual (\$000's)	Sales Per Sq. Ft. (\$)	Percentage Share of Total (%)
1	358,000	25,525	20,165	20,572	56.20	20.6
2	140,200	9,885	7,809	7,837	55.69	8.0
3	963,000	69,550	54,944	54,857	57.05	56.0
4	167,600	11,640	9,196	8,816	54.86	9.5
5	106,800	7,400	5,846	5,878	54.73	5.9
Totals	1,736,400	124,000	97,960	97,960	54.41	100.0



TABLE 5-5

SHOPPING CENTRE CHARACTERISTICS

(WITH NEW CENTRE ADDED)

HYPOTHETICAL CITY

1966

	<u>Centre</u>	<u>Gross Enclosed Floor Area (Sq. Ft.)</u>	<u>Number of Shops</u>	<u>Total Employment</u>	<u>Number of Shop Types</u>
1	Northdale	358,800	41	102	21
2	Southdale	140,200	28	75	16
3	Downtown	963,000	85	450	37
4	Eastdale	167,600	31	88	18
5	Westdale	106,800	17	45	12
6	Newtown	150,000	30	85	19



TABLE 5-6

ESTIMATED SHARES OF RETAIL SALES  
ATTRACTED TO EACH CENTRE FROM ZONE 7  
(WITH NEW CENTRE ADDED)  
HYPOTHETICAL CITY

1966

			PER CAPITA RETAIL EXPENDITURE		
ZONE NUMBER			POPULATION		
7			18,130		
			\$970		
Centre No.	Centre Size (Sq. Ft.)	Travel Time (Minutes)	Number of Customers Attracted	Expenditure at Centre (\$)	Percentage Share of Total (%)
1	358,800	19.51	930	902,100	5.2
2	140,200	15.46	500	485,000	2.8
3	963,000	4.14	13,450	13,046,500	974.1
4	167,600	6.92	1,260	1,222,200	6.9
5	106,800	8.38	670	649,900	3.7
Sub-Total	1,736,400		16,810	16,305,700	92.7
6	150,000	7.21	1,320	1,280,000	7.3
Totals	1,886,400		18,130	17,586,000	100.0



TABLE 5-7

SUMMARY SITE INFORMATION

(WITH NEW CENTRE ADDED)

HYPOTHETICAL CITY

1966

	<u>NUMBER OF CENTRES</u>	<u>NUMBER OF ZONES</u>	<u>PER CAPITA RETAIL EXPENDITURE</u>			
	6	12	\$790			
<u>Centre No.</u>	<u>Centre Size (Sq. Ft.)</u>	<u>Number of Customers Attracted</u>	<u>Total Retail Expenditure</u>		<u>Percentage Share of Total Expenditure</u>	
			<u>Planned</u>	<u>1966</u>	<u>Planned</u>	<u>1966</u>
			<u>(\$000's)</u>	<u>(\$000's)</u>	<u>(%)</u>	<u>(%)</u>
1	358,800	24,400	19,276	20,572	19.7	20.6
2	140,200	8,640	6,826	7,837	7.0	8.0
3	963,000	63,550	50,204	54,857	51.2	56.0
4	167,600	10,885	8,599	8,816	8.8	9.5
5	106,880	6,525	5,155	5,878	5.2	5.9
Sub-Total	1,736,400	114,000	90,060	97,960	91.9	100.0
6	150,000	10,000	7,900	-	8.1	-
Totals	1,886,400	124,000	97,960	-	100.0	-





probably attract \$7 million in sales, the largest proportion of which would represent business lost by the downtown merchants.

Obviously this procedure could be used to evaluate the impact of a new centre at sizes above and below the centre size originally suggested and under varying conditions of population size, income levels and distribution. Alternatively the shares attracted to a number of other possible sites could be measured and a site selected which maximized the share at that site and minimized the impact on any one of the existing centres.

Since the size and distribution of populations, per capita incomes and the relative attractiveness of centres vary over time, the validity of the model's predictive ability assumes great importance to municipal planners. If the variables in the model can be estimated for dates into the future, say 1976 and 1981, the model can provide a reasonable prediction of what changes of shares of retail sales will be attracted to existing and proposed centres over these periods of time. If, for example, the future pattern of development can be determined in terms of where and how people will be living, what their incomes will be, how much of their incomes will be spent on retail goods and services and how travel times will be influenced by new road networks, public transit and car ownership levels, the theoretically best arrangement of shopping centres by size and type could be determined. Applications for shopping centre sites could then be evaluated in terms of how well they fit this optional solution. Alternatively, if more than one site is proposed at the same time, a further guide is available for deciding which site should be approved.

A further use of the model is in predicting future retail floor space requirements. If populations and real incomes increase, and if standards of sales per square foot of retail floor space remain relatively unchanged (as they appear to have done over many years) the model can be used to predict how much additional floor space would be required at each site to either retain their share of the sales potential or how much additional floor space could be added in new centres without impairing the sales potential of the remaining sites.



## Applications

The retail gravity model, in a variety of formulations, has been put to practical use in a number of applications. Early applications include an evaluation of alternative arrangements for shopping centre locations in the Baltimore "Metrotowns" and in planning for the growth and development of Canberra, Australia. Other applications have been made in England, including the Haydock study conducted by the University of Manchester, the Lewisham study in Greater London, the West Midland shopping model, the South Bedfordshire model and the Teeside model. Extensive work has also been done by the Insititute for Centre - Planlaegning in Denmark and other European countries have reported specific applications. Most of these applications are referred to in the Selected Bibliography.

In Canada no published reports of the use of this new approach have appeared in the literature although applications are known to have been made in one of the Cape Breton urban renewal studies and by private planning consultants who have added the retail gravity model to their arsenal of methodologies.

## Conclusions

The results of repeated applications are impressive and indicate that the methodology, as refined by experience and newer insights into consumer behaviour, is sufficiently reliable to warrant serious consideration.

The further development of the technique over the last five years has aimed at overcoming its major imperfections and delimiting the situations in which it is particularly useful. The main advantages are its ability to test a large number of alternative arrangements under a wide variety of assumptions about the future, the clarity of thinking that is required, the precision with which uncertainties can be identified and used to define the upper and lower ranges of estimates, and the similarities in technique between the transportation study models and the retail potential model.

The disadvantages of the methods employed are largely theoretical in nature, but no less real in their import. The model appears to employ only a few of the discernable factors that can be identified as influencing consumer



shopping behaviour. In addition, it is a macro-model; that is to say that it appears to be reasonably accurate in explaining the behaviour of large numbers of people, but when applied to smaller areas the differences in individual consumer characteristics may reduce its reliability. There are also problems of data availability and suitability. A great deal of research has already been undertaken and more is underway in marketing and planning research institutions in North America, England, Denmark and other European countries.

It is felt that the potential of this newer methodology should be exploited in Ontario. This suggestion is based on three considerations. First, the strong concern about the problem of decision making when applications for suburban shopping centres are put forward in the majority of municipalities in the province requires that the most potent methods be exploited in an attempt to improve current practice. Second, the current methods of market analysis appear to fall short in providing information on the degree and incidence of the impact of new suburban centres on existing retailers. Third, conclusions reached in other jurisdictions indicate that the methodology has great potential both in planning and retail shopping centre applications.



## APPENDIX

### Annotated Bibliography

There is an endless number of books, articles and pamphlets which discuss various aspects of shopping centre development, retail location, market analysis and shopping models. This bibliography represents a limited selection of those books and articles which are considered to be of special importance to the topic of this report. The majority should be found in major reference libraries.

Applebaum, William (ed.), *Store Location and Development Studies*, Worcester, Mass.: Clark University, 1962.

A reader containing articles which discuss projections of future retail floor space requirements, the rate of change in retailing and the techniques of mapping urban land use and population data.

Baker, Geoffery and Bruno Funaro, *Shopping Centres - Design and Operation*, New York: Reinhold, 1951.

An early but still useful examination of shopping centre design, location, and parking. The determination of future floor space requirements is not as well covered as are the sections on how retail centres operate.

Barry, Brian J. L., *Commercial Structure and Commercial Blight*, Chicago: Department of Geography Research Paper No. 85, University of Chicago, 1963.

An important contribution to understanding the spatial structure of shopping in an urban area. Defines causes of blight and decay and how the problems can be tackled through empirical studies.





Berry, Brian J. L., *Geography of Market Centres and Retail Distribution*, Englewood Cliffs, N.J.: Prentice-Hall, 1967.

A review of the approaches to a study of shopping centres by geographers, market analysts, urban planners, and regional scientists. A very useful source for interpreting reports on shopping centre site potential.

Berry, Brian J.L., "The Retail Component of the Urban Model", *Journal of the American Institute of Planners*, May 1965, pp 150-155.

A concise statement of the methods developed in *Commercial Structure and Commercial Blight* to plan for future retail floor space requirements.

Brown, Milton P. and Eleanor G. May, *Operating Results of Multi-Unit Department Stores*, Cambridge, Mass.: Harvard University Graduate School of Business Administration, Bureau of Business Research Bulletin, 1961.

Relates efficiency and profitability of the suburban branches of downtown department stores.

Carrothers, Gerald A.P., "An Historical Review of Gravity and Potential Models of Human Interaction", *Journal of the American Institute of Planners*, May 1956, pp 94-102.

The application of the spatial interaction concept to analysis of the urban area. A definitive article of special interest to those concerned with gravity potential simulation models of retail location.

Controllers' Congress, *Merchandising and Operating Results of Department and Specialty Stores*, New York.: National Retail Merchants Association, 1950 to 1968.

A prime source of data for those involved in the planning or renewal of shopping districts. Covers items of cost, sales per square foot of net selling space, and profits.

Cox, William E., Jr., "A Commercial Structure Model for Depressed Neighbourhoods," *Journal of Marketing*, July 1969, pp 1-9.



An application of the traditional market analysis techniques to specific centres in the older neighbourhoods of Cleveland. A clear presentation of the methodology employed in ensuring that a neighbourhood retail centre serves the needs of its trade area customers in terms of the number and type of stores represented.

Friendly, Philip M., *A Methodology for Economic Analysis of Retail Commercial Facilities in Urban Renewal Areas*, Vancouver: City Planning Department, Vancouver, 1966.

A useful compendium of the methods of analysis for the retail component of urban renewal studies. Contains an extensive bibliography on retail trade and land use.

Friend, J. K., and W. N. Jéssop, *Local Government and Strategic Choices*, London: Tavistock Publications, 1969.

A review of decision making at the level of a municipal government. Includes several lucid examples of the analysis of the gross uncertainties inherent in the traditional trade area analysis approach to estimating future retail floor space requirements. Raises the level of understanding of the decision taking process in Coventry, England which has already achieved renown for its far-sightedness in making decisions about its future.

Great Britain: National Economic Development Committee, *Shopping Models*, London: Her Majesty's Stationery Office, 1970.

A comprehensive and competent review of the methods available for studying the impact of new shopping centres on existing development and of forecasting future shopping space requirements. Most useful in providing an understanding of the computer oriented gravity-potential simulation models employed increasingly in Great Britain, France and Scandinavia.

Gruen, Victor and Larry Smith, *Shopping Towns: U.S.A.*, New York: Reinold, 1960.

One of the best sources of information on all aspects of shopping centre location, planning, operation and design. Covers market analysis clearly and concisely. Along with the Nelson book mentioned below, a necessary item on the planning bookshelf.



Hayes, Martyn Cordey, *Retail Location Models*, London:  
Centre for Environmental Studies, C.E.S. Working  
Paper No. 16, 1968.

A truly comprehensive survey of the methods, both  
current and potential, which can be applied to a study  
of the problems of retail location, including their  
advantages and shortcomings.

Horwood, Edgar M., "Public Policy and the Outlying  
Shopping Centre", *Journal of the American Institute  
of Planners*, Fall 1958, pp 215-222.

Presents the case for careful control by the  
municipality of the size and spacing of shopping centres  
in a metropolitan area.

Hoyt, Homer, *The Dollars and Cents of Shopping Centres*,  
Washington, D.C.: Urban Land Institute, 1969.

A basic guide to the measurement of retail space  
requirements, costs of development and operation,  
rental arrangements, the mix of stores in a centre  
and the essential conversion tables required by the  
planner and market analyst in any study of retail  
centres.

Huff, David L., "A Probabilistic Analysis of Shopping  
Centre Trade Areas", *Land Economics*, February 1963,  
pp 81-90.

The application of probability theory to the  
determination of market potential using geographic  
techniques.

Huff, David L. and Larry Blue, *A Programmed Solution  
to Estimating Retail Sales Potentials*, Lawrence,  
Kansas: Centre for Regional Studies, The  
University of Kansas, 1964.

A program in Fortran IV of the Huff formulation of  
the retail gravity-potential model. Includes full  
instruction, data for testing, application and  
interpretation.

Kelly, Eugene J., *Shopping Centres - Locating  
Controlled Regional Centres*, New York: ENO Foundation  
for Highway Traffic Control, 1956.



A general reference on the factors influencing location of regional centres.

Kendrick, J. G., "Retailing in Canada", *The Canadian Marketer*, Winter 1969-70 pp 11-15.

A useful review of retail development in Canada by the President of Zellers. Provides a comprehensive listing of future trends in Canadian retailing.

Lakshmanan, T.R. and W. G. Hansen, "A Retail Market Potential Model", *Journal of the American Institute of Planners*, May 1965, pp 134-143.

A report on the use of the gravity-potential concept in the analysis of retail location. This article has been the basis for much of the subsequent study of retail location in Great Britain and Scandinavia.

McNair, Malcolm P., *Operating Results of Department and Specialty Stores*, Cambridge, Mass.: Harvard University Graduate School of Business Administration, Business Research Bulletins, 1969.

Similar to the NRMA publication mentioned above except that results are stated in terms of gross enclosed space rather than in sales per square foot of net selling space.

Moyer, M.S., and G. Snyder, *Trends in Canadian Marketing*, Ottawa: D.B.S. 1961 Census Monograph Programme, 1967.

A detailed analysis of trends in retailing in Canada up to 1961.

Nelson, Richard L., *The Selection of Retail Locations*, New York: F.W. Dodge, 1958.

A book for the planners bookshelf. Excellent treatment of most aspects of retail location analysis and trade area surveys. A great deal of general and interesting detailed information about location studies and consumer behaviour.

Planning and Transport Research and Computation Company Limited, *Shopping Models, Volumes I and II*, London: Planning and Transport Research and Computation Company Limited, 1968.





The papers and proceedings of a conference on shopping models sponsored by the PTRCCO in October 1968. Papers were read and discussed by invited participants from government, business, universities, planning agencies and private consultants. The contributors were from Great Britain, Denmark and France. Important material for those concerned in detail with the study of the impact of suburban shopping centres on existing or planned retail facilities.

Simmons, James W., *The Changing Pattern of Retail Location*, Chicago: University of Chicago Press, 1964.

A companion book to *Commercial Structure and Commercial Blight* Details the changes in spatial structure of retail locations in Chicago over an extended period of time.

Simmons, James W., *Toronto's Changing Retail Complex*, Chicago: University of Chicago Department of Geography Research Paper No. 104, University of Chicago, 1966.

An application of the Berry analysis in a Canadian context. Useful methodology and analysis.

Stedman, Gordon H., "The Rise of Shopping Centres", *Journal of Retailing*, Spring 1955, pp 11-26.

Traces the development of shopping centres from their inception in the 1920's to their current state of development in the 1950's. Much of this material is also covered in the Gruen and Smith book.

Sternlieb, Gerge, *The Future of the Downtown Department Store*, Cambridge, Mass.: Harvard University Press, 1962.

An analysis of the role of department stores in the downtown of American cities and the strategies which have been employed in suburban shopping centre development.

Thompson, W.L., "Future Directions in Retail Area Research", *Economic Geography*, Vol. 42, Worcester, Mass.: Clark University, Vol. 42, No. 1, January 1966, pp 1-18.

A concise statement of the development of trade area analysis and marketing models. Includes a useful discussion of the limitations of current methodologies and an exploration of new areas for research in retail location.



Tri-County Regional Planning Commission, *Shopping Centre Effects on Central Business Districts*, Akron, Ohio: Regional Planning Study No. 37, Tri-County Regional Planning Commission (Medina-Summit-Portage), October 1965.

A partial analysis of the effects of suburban shopping centres on downtown areas. Measures trends from 1950-1963 in the distribution of retail sales in Akron and examines the results of a survey of consumer attitudes and preferences for shopping centres as opposed to central business districts.

University of Manchester, *Regional Shopping Centres: A Planning Report on North West England, Part I and Part II (A Retail Shopping Model)*, Manchester: Department of Town and Country Planning, University of Manchester, 1964 and 1966.

The two volumes are the results of an investigation into a proposal for a regional shopping centre at Haydock, Lancashire which lies between Manchester and Liverpool. These large scale studies undertaken in Manchester provide information on the need for the centre, its desirability, its potential profitability and its impact on existing shopping centres over a very wide region in the Midlands. The investigation also touched on broader issues, such as the relation of the selected site to future proposed and possible changes in patterns of population distribution, road and rail networks and on urban and regional planning and development in general. The second report presents the results of the use of the gravity-potential model to an analysis of the same problem but using the emerging techniques of computer simulation. These studies are considered to be very important to anyone concerned with evaluating the impact of retail development on existing centres because they bridge the gap between the approaches of the trade area analyst and the spatial interaction modeller.

Urban Land Institute, *The Community Builders Handbook*, Washington, D.C.: Urban Land Institute, 1969.

A useful reference book for planners on all aspects of building the urban community from housing to industrial parks. An extensive section on all the studies employed in shopping centre development. Detailed and authoritative.



## Bibliographies

A number of comprehensive bibliographies on shopping centres, downtown development, etc. are also available. Some of these are listed below.

*A Basic Bibliography for Downtown Development*,  
National Retail Merchants Association, n.d.,  
100 West 31 Street, New York, New York, 10001,  
31 pages.

*Selected Bibliography on Shopping Centres*,  
International Council of Shopping Centres,  
342 Madison Avenue, New York, New York, May 1962,  
9 pages.

*Exchange Bibliography Nos. 12 and 16*,  
Council of Planning Librarians,  
Post Office Box 229, Monticello, Illinois, 61856,  
November 1959, 56 pages, August 1960, 26 pages.

*Selected Annotated Bibliography on Shopping Centres*,  
The Kroger Co.,  
35 East Seventh Street, Cincinnati, Ohio,  
January 1957.







3 1761 11547561 8